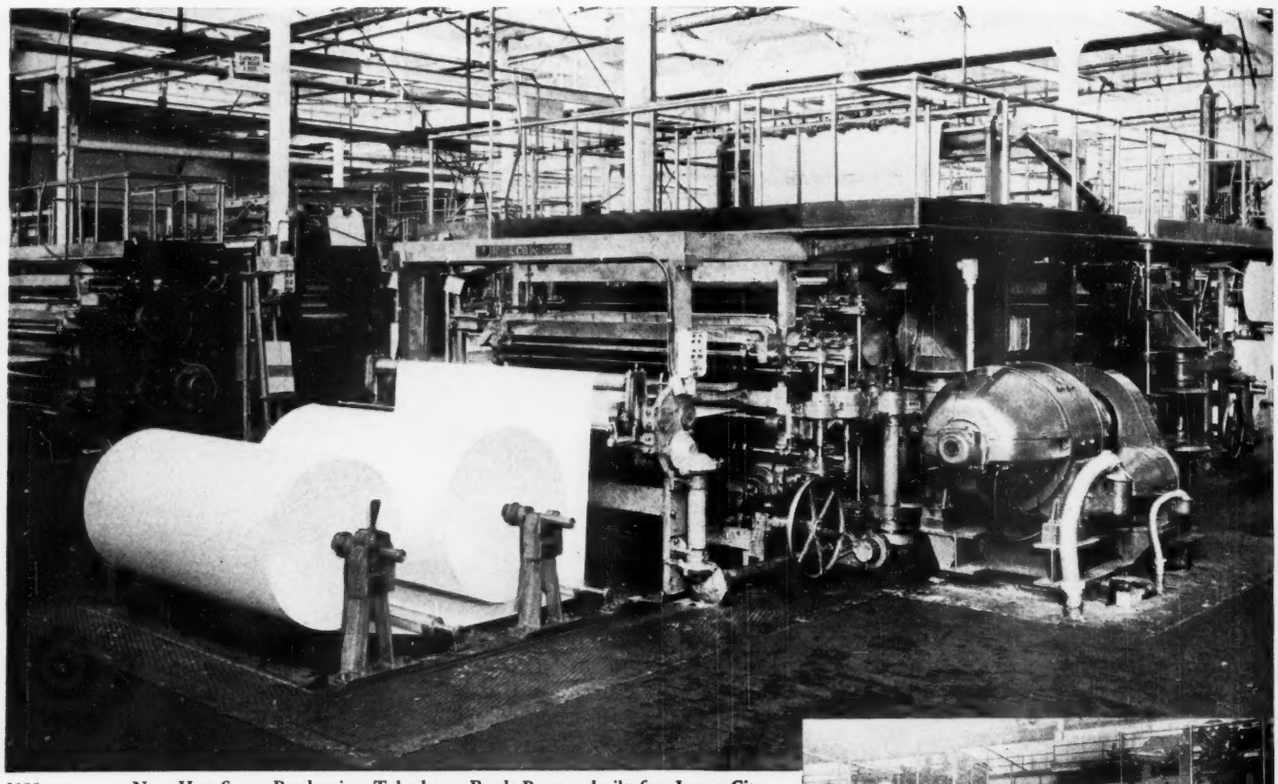
PRINTING EQUIPMENT ENGINEER

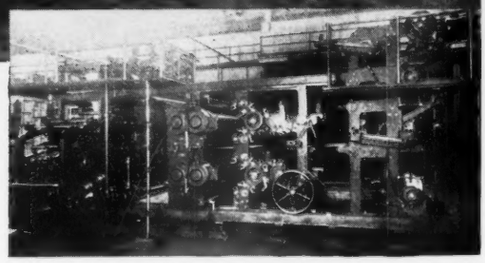
APRIL • 1934

A Technical Publication for Mechanical Executives Responsible for Printing Production, Equipment and Supplies

3 OUTSTANDING HOE INSTALLATIONS ALL SKF EQUIPPED



3198 New Hoe Super-Production Telephone Book Presses built for Jersey City Printing Co. Big advance in printing machinery construction. Have solid steel frames with solid steel plate and impression cylinders running on SKF.

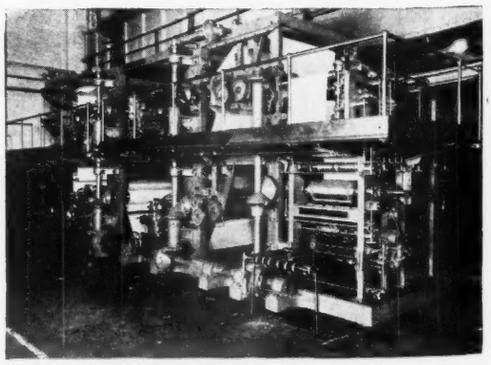


Hoe Super-Production Magazine Presses built for Christian Science Publishing Society. Have solid steel press frames, helical, spiral and bevel gears, self-aligning tension rollers, 500 SKF Bearings, etc.

● MODERN APPLICATIONS of SKF Bearings bring machines up to date. They make presses — like trains, airplanes, automobiles — speedier, dependable. And they are important in the smooth operation and the high running speed of these presses . . . continuously raising production records and lowering costs.

SKF's *help* these Hoe Telephone Book Presses "operating daily at speeds more than 50 per cent in excess of previous speeds for presses of this type." SKF's *help* these Hoe Super-Production Rotary Web-Perfecting Magazine Presses maintain their reputation for being "the fastest running magazine presses in the world." SKF's *help* these New Hoe Magazine Presses, "the last word in printing press construction, with *precision* and *accuracy* so essential for the fine quality of printing required."

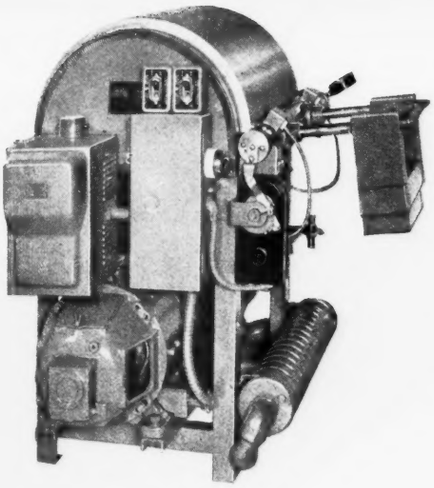
Reasons enough why Hoe uses SKF Bearings in solid steel type and impression cylinders, inking rollers, stitcher, press drive, etc. For engineers the world over *know* SKF Bearings *out-perform* the fondest expectations of engineers who specify them . . . that SKF's are built for fast, gruelling service. SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.



64-page Hoe Super-Production Rotary Web-Perfecting Magazine Presses built for R. R. Donnelley & Sons Co. Have automatic tension devices for controlling running web, web equalizing rollers, variable speed web feeding in mechanism, etc.

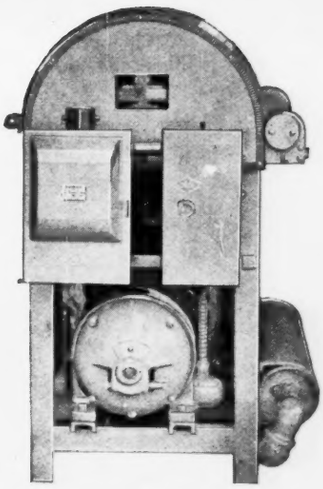
SKF

BALL AND ROLLER BEARINGS



STAHI AUTOFORMER

You Will Find No Substitute For A STA-HI



STAHI JUNIOR FORMER

You will never know why it is the biggest piece of news in the newspaper industry, until you see this little machine perform. For the first time in the Stereotyper's life, he can relax completely—he knows that every dry-mat will come from The STAHI, with Uniform Casting Levels—the days of Buckles and Casting Face Distortion are over, he can concentrate on other duties, freely, giving the best supervision to those points in his work that will speed up the routine handling of Stereotyping Problems—to his advantage and to the Publisher's advantage.

STA-HI

STAHI NEWSPAPER SUPPLY COMPANY, INC.

1020 Crocker Street
Los Angeles, California

417 Oregonian Building
Portland, Oregon

AGENCIES

Goss Printing Press Company
Chicago, New York, San Francisco

Toronto Type Foundry Company
Toronto, Montreal, Winnipeg, Canada

A. M. Carneiro & Company—South America
152 West Forty-second St., New York, N. Y.

Wood Flong Corporation
Hoosick Falls, N. Y.

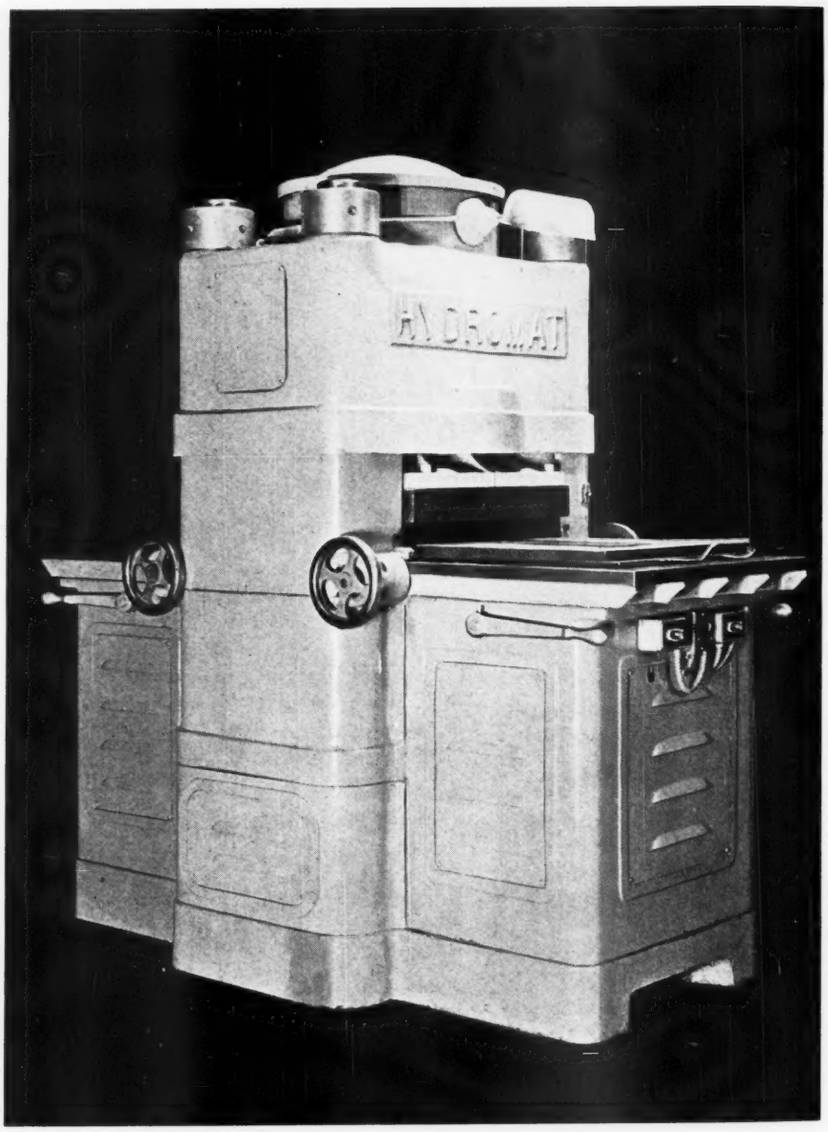
Certified Dry Mat Corporation
New York City, N. Y.

Goss Printing Press Company—London. England
European Manufacturers

INVESTIGATE

This Direct Pressure Molding Press

★



It is the most economical, fastest, the most accurate Direct Pressure Machine available at any price

Everyone interested in Direct Pressure equipment for newspaper work or commercial work should investigate the Hydromat Direct Pressure Molding Press. One of these machines can be seen at work in almost any section of the country east of the Mississippi. Let us show you by actual demonstration how you can get truer impressions on advertisements, halftones, etc. We will be glad to demonstrate that this machine is three seconds speedier than the faster roller machine. We will also demonstrate that it gives perfect reproductions up to 175-line screen.

The Hydromat is absolutely essential for making mats for color work. Among other advantages in this type of work is the fact that it isn't necessary to adjust the pressure to the actual printing surface of the color, instead the same pressure and the same cushion can be used on the same color, and at the same time you will get identical depths on the mat. Here is a machine so nicely adjusted that it eliminates the danger of smashing types and cuts.

Fill Out and Mail Coupon below for Complete Information and Demonstration if Desired

Electro-Hydraulic Machinery Co.,
1025 Sweitzer Avenue, Akron, Ohio.

Gentlemen:
Please send us complete information on the Hydromat and tell us where we can see one demonstrated.

Name_____

Concern_____

Street Address_____

City_____ State_____

ELECTRO-HYDRAULIC MACHINERY CO.

1025 SWEITZER AVENUE » AKRON, OHIO

Associate Member

National Printing Equipment Association, Inc.

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Share Your Knowledge With Others

The key men in your organization will appreciate looking over the pages of this magazine. Perhaps one of them will be able to put some particular technical idea to good use.

Place a check mark in each square for attention of the department head or assistant whom you wish to look over special articles in this issue.

☐ *Production Manager*

☐ *Foreman Lithographing Department*

☐ *Mechanical Superintendent*

☐ *Superintendent Stereotype Foundry*

☐ *Composing Room Superintendent*

☐ *Superintendent Electrotype Department*

☐ *Chief Composing Room Machinist*

☐ *Superintendent Press Room*

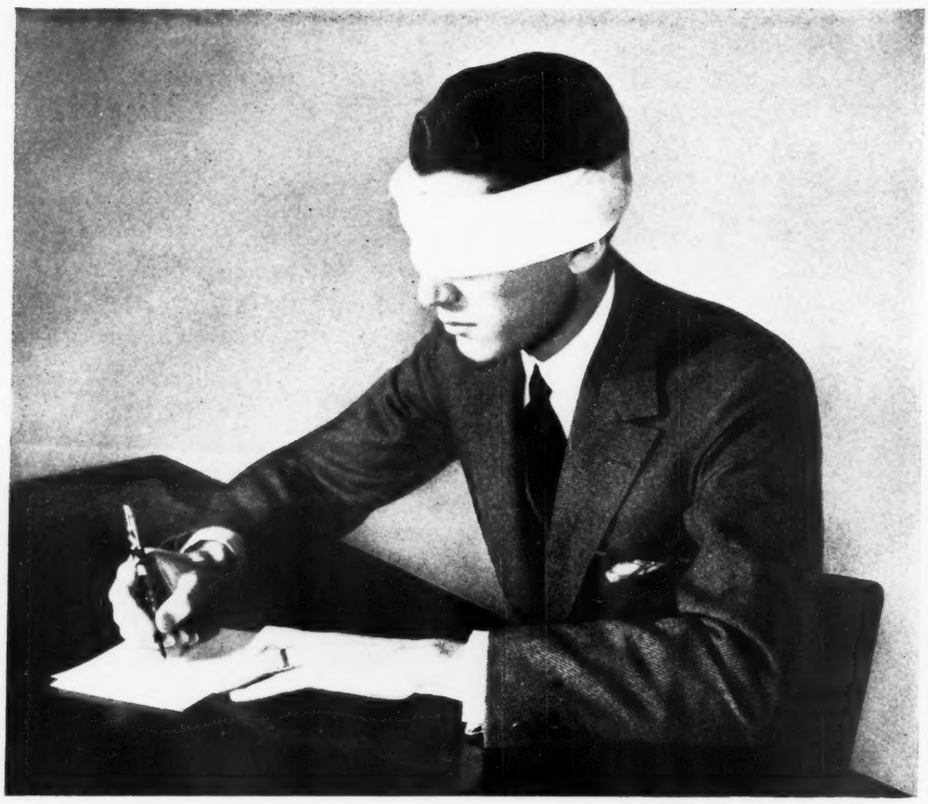
☐ *Monotype Department*

☐ *Bindery Foreman*

☐ *Photo Engraving Department*

☐ *Manager*

☐ *Purchasing Agent*



No Way To Write Your Best Girl

The involuntarily blindfolded "Romeo" who writes his favorite girl friend may let himself in for a bit of trouble. Unable to verify what he writes his pen may make some marks of which he is not aware.

Such, however, is the predicament of many linecasting machine operators. Because reference characters on ordinary brass matrices are quite difficult to read, operators make many errors which *could be avoided with readable matrices.*

When an operator attempts to verify an assembly of ordinary matrices he usually is as handicapped as a blindfolded writer who tries to see what he has written.

But it is no longer necessary to thus handicap operators—nor to waste 12% of their time in error correcting.

By having your present matrices treated with our Black and White process—*making reference characters plainly visible in the assembler*—a significant proportion of error expense can be eliminated.

No guess work about this. We *guarantee* a 25% reduction in all errors in original machine composition and *prove this saving* before you pay us a penny.

Matrix Contrast Corporation

Empire State Building New York City

(Sole licensees of the Percy L. Hill Black and White Patent No. 1466437, held valid by U. S. District Court, Eastern District of New York. Infringers will be vigorously prosecuted.)

PRINTING
EQUIPMENT
ENGINEER

for April 1934

Business Is Better

By STAFF WRITER

ASSUMING that 1923-25 may be taken to represent normal business volume periods, business in general at this season of the year is 10% to 20% improved over last year. Despite the "jittery" conditions brought about by injection of social and economic virus into business and industrial veins, steady improvement continues sufficient in volume to encourage observers to point out that business volume in general has passed the average level of 1931 and is still going up. Industry continues to have its serious problems but they are not of sufficient import to stop the swell of business improvement.

As a general sure-fire indication of improved business, the commercial printing plant and the newspaper plant must first be taken into consideration. Before business can sell its products it must have printed matter explaining what it has for sale. Catalogs need revising by eliminating the obsolete and inserting the new items, price lists must be changed, special campaigns call for special literature, newspapers and periodicals must be used to tell the people about the things they ought to have. The response must be there or else printed matter and advertising volume would drop off. Many commercial printing plants now report the greatest increases in business volume for several years.

Perhaps the most noticeable improvement is reflected by newspaper linage which shows an increase of 11% for this February as against a year ago. A consistent increase is expected for March, the figures for which are not available at the time this is being written.

Commercial plant readers of *Printing* EQUIPMENT *Engineer* are reported actively interested in offset equipment, patent base, rapid printing presses, paper, rollers, metal and supplies. Daily newspapers are interested in equipment for color printing, stereotyping, rubber rollers and toned and color inks. In the publication field, trade journal advertising in nearly all lines shows a gain for the first time in several years. The major portion of magazines in the general field are participating in increased business, *Fortune* magazine alone reporting a 125% advertising gain over March, 1933.

In the equipment and supplies manufacturing field, so far as the printing industry is concerned, perhaps will be found the best index relating to improvement in business in general. The printer and the publisher are not prone to spend good money for equipment and supplies unless there is an immediate demand nor until a return is in sight for money spent. Recent equipment and supplies orders have encouraged manufacturers. To say that this is a hopeful condition is saying the least. We would say it is some accomplishment as against a year ago when industry had dropped to 50% of normal!

Those manufacturers who have prepared statements for *Printing* EQUIPMENT *Engineer* represent a fairly good coverage and these expressions may be taken as a proper perspective of present conditions in an industry which is extremely sensitive to the state of trade. While all the statements do not contain positive percentage figures, yet they may be taken to show a favorable condition in the industry.

BETTER BUSINESS ACTUALLY HERE

Harold M. Tillinghast, vice president of R. Hoe & Co., New York, N. Y., says:

We are very glad to be able to state that there are signs on every side that better business is not only on the way but is actually here. For some time now a more confident attitude on the part of publishers and printers appears to have displaced the uncertainty of the last few years, and current inquiries and orders indicate that deferred purchasing is now taking place, and there is now a considerably greater demand not only for small machinery and repairs and supplies but also for the larger units. We have also noted a very considerable increase in active inquiries based on the contemplated modernization of printing plants by means of more productive machinery. In other words, business confidence appears to be returning all along the line and with the consequent gain in advertising which has followed, the newspapers and printing trades and the printing equipment industries can, we believe, look forward confidently to a materially increased volume of business in all lines. The completion and approval of

the Graphic Arts and Daily Newspaper Codes and of the Codes of the Printing Equipment and Newspaper Press Building Industries has, we believe, been a constructive step forward in all of these industries and should help materially to create more cooperation and a better feeling between all branches of the printing art, which in turn will mean more business for all of those concerned in any way in the Industry.

With the imminent solution of its own financial difficulties the great progress toward which was described in the recent report of the Irving Trust Company, Receiver in Equity for R. Hoe & Co., Inc., to the United States District Court, the company is confidently expecting the best business for 1934 it has had in many years. By devoting its energies during the depression period to an improvement and extension of its lines, it is now in a splendid position to meet the requirements of the prosperous future which we are certain this country is bound to enjoy.

Speaking Cooperatively, Mr. Mechanical Executive, This is Your Magazine

The advertisements in *Printing* EQUIPMENT *Engineer* have been prepared especially for you. When writing manufacturers or talking to advertisers' representatives mention *Printing* EQUIPMENT *Engineer.* We'll appreciate it.

You are invited to discuss any of the various technical and production phases of your work. Other mechanical executives have problems like yours, in greater or less degree, the only difference being in the size of the plant over which each has supervision.

If you have a technical help which has been the means of overcoming some production difficulty, others will be glad to read about it through *Printing* EQUIPMENT *Engineer.* In case you don't feel like dictating to the stenographer, just write informally with a pencil on any kind of paper and send it to

Mac Sinclair
Editor.

IMPROVEMENT SHOWN IN SEVERAL LINES

Vandercook & Sons, proof press manufacturers, Chicago, Ill., David Vandercook says this company has had a steady business improvement since last December.

R. R. Robertson, etching machines and planographic apparatus, Chicago, Ill. Mr. Robertson says his company is very busy furnishing planographic apparatus to printers.

H. B. Rouse Co., mitreing machines, slug cutters, and printers' specialties, Chicago, Ill. Walter I. Sittig, secretary-treasurer, states that there is a great improvement over last year but no month-to-month improvement is evident this year.

Economy Engineering Co., Chicago, Ill., W. B. Pavey, president, says there is considerable improvement in general line of portable elevators and hoists, but not much improvement in sales in printing equipment field.

Miehle Printing Press & Mfg. Co., printing presses, Chicago, Ill. C. I. Mansur, assistant sales manager, reports considerable improvement up to the first of March.

Ideal Roller & Mfg. Co., printers' rollers, Chicago, Ill. E. Byron Davis, secretary, reports steady improvement for last eight months, which seems to be continuing and is based on good, solid business.

Ludlow Typograph Co., Chicago, Ill., A. H. Hedly, president, says that last three or four months have shown an improvement in business, not much, but enough to be encouraging.

Hacker Mfg. Co., Chicago, Ill., W. M. Sawyer, secretary, states there is considerable improvement in business but prospects seem to warrant more improvement than is evidenced by actual orders.

International Printing Ink Co., C. R. Sherman, assistant manager, Chicago office, says there has been a steady improvement since last June which seems to be continuing.

Kohler Brothers, Chicago, Ill., Franklin D. Kohler says there is an increase in number of inquiries and in orders. Also great interest in new and improved machinery being shown by present users of the company's equipment.

CONDITIONS STIMULATE DEMAND FOR NEWSPAPER PRESSES

When interviewed March 20 regarding business conditions, Walter C. Scott of Walter Scott & Co., Plainfield, N. J., stated that:

Walter Scott & Company has been particularly fortunate in having sufficient business to operate the factory on full capacity, with three 8-hour shifts on a 40-hour, 5-day week basis.

The demand for our machines has been caused largely by a greatly improved product. Presses now being furnished will produce a better printed, more neatly folded newspaper more economically than heretofore. The fact that all newspaper press companies are now furnishing a much superior product, and have practically no repossessed presses, has largely simplified the second-hand press problem.

We have also been fortunate in concluding an agreement with the International Association of Machinists, whereby strikes and lock-outs are prohibited, which will give the buyer the assurance that he will receive his press equipment at the time desired, and also insures a stable condition in the industry.

These facts, coupled with the adoption of the Code of Fair Competition for the Newspaper Press Industry, create favorable circumstances and advantages to the newspaper publishers, which, it is hoped, will stimulate and continue the demand for newspaper presses.

As the sale of our product depends largely on the demand for advertising, we have not considered it good policy to curtail our own advertising.

LOOK FOR GRADUAL IMPROVEMENT

Mergenthaler Linotype Co., Brooklyn, N. Y., Harry L. Gage, vice president, in charge of sales:

The Mergenthaler Linotype Company looks for a gradual improvement in the printing and publishing industry. We are confident that the operation of the various codes has potentialities for betterment. We are particularly concerned with the obvious surplus of used and outmoded machinery which is on the market at the present time. We feel that the plan which has been written into the printing equipment code for the formation of a new corporation to deal nationally with the problem of surplus used machinery, is at the very root of all the economic problems that face us today. We feel that the surplus equipment is not alone a difficulty confronting manufacturers, but that it is also a basic cause of many of the difficulties concerning printers and publishers and that it has a distinct bearing on the national problems of determining proper manufacturing costs.

PUBLISHERS NOW IN POSITION TO BUY NEEDED EQUIPMENT

Clifford Yewdall, secretary-treasurer of the Matrix Contrast Corporation, New York, N. Y., observes:

With newspaper linage increasing, and with the benefit of all the economies that have been made in the past, publishers are now in a position to buy the necessary needed equipment to bring mechanical departments up-to-date in every respect.

OUTLOOK GOOD FOR COMING MONTHS

Alden T. Mann, Jr., vice president, in charge of sales, Intertype Corporation, Brooklyn, N. Y., has this to say:

I am perfectly willing to say that our business is better, much better, than at this time a year ago. The outlook is also much better, and while a prediction is difficult and perhaps none too useful, we are hoping, and feel that we have grounds to hope, that our business volume will continue to increase during the coming months.

INCREASE IN INK CONSUMPTION

George H. Morrill Co., L. S. Allstrum, general manager:

Since May of last year we have seen a steady improvement, particularly in the last two months. January was the best month we have had since 1931. February shows very marked improvement over February of last year. I would say that the increase so far is mostly due to larger consumption. While there has been some increase in prices, they have not had sufficient effect to be taken into account. It has really been an increase in consumption. Of course a large part of that has been from newspapers although all lines are showing a fair improvement. Our outlook is very good. We feel very optimistic over the future and barring any unforeseen happening in Washington, it looks to us as though things are going to come right along (not any radical increase) but I think we are in for a steady stepping up of business. It does not happen to be in any one location, it is everywhere, particularly, during the last two months through the middle west and south. Business there is showing up stronger than in other parts of the country. There is a steady improvement all over the country.

CONSISTENT INCREASE OF BUSINESS

Linotype Parts Corporation, New York, N. Y., Isaac Bendow, president and manager:

During the last six months of 1933 there has been a perceptible improvement. I should say an improvement equaling 10% to 15%; during the first two months of this year there has been an improvement over 1932 or early part of 1933 of about 20%.

IMPROVEMENT IN SPECIAL SUPPLY FIELD

Rolled Plate Metal Co., New York, N. Y., Roy Manny, president, is quoted as saying:

Our business is with the photoengravers and newspaper engraving plants, so it is rather narrow in scope. The type of business we run into is not any criterion of general business, but in our line it looks like (the Code being settled for the photoengravers and I believe for the newspaper engravers) everybody has been given a chance to draw a long breath and get back to work again. Our business shows signs of improvement.

Standardization Makes Progress

[AN EDITORIAL]

LETTERPRESS printing is a precise process—and rightly so. No one denies this except the fellow who by inference habitually prostitutes precision by using slap-bang methods in order to cover a shortage in the money he expects to receive for the work he has done.

It is thought that the new standard scale for electrotypes which is a part of the National Electrotypers' Code is functioning as a persuasive element in the movement toward precision in the letterpress branch of the industry by encouraging the printer to use metal base systems upon which to mount standard electrotypes (0.154 in.) in place of wood.

There is a considerable price differential between the cost of mounted and unmounted electrotypes. In the case of some printing firms using wood-mounted electros the difference between the cost of the mounted and unmounted electros would amount to quite a sum of money in a year's time which could be turned to customer advantage.

Some of the price differentials as shown in the Standard Scale Book are as follows:

5½ in. by 8½ in. Wax Mould Electrotype (Type—Line Cuts)

	Unmounted	*Mounted on Wood*
Copper	$3.16	$3.95
Nickel	3.95	4.74

5½ in. by 8½ in. Wax Mould Electrotype (Halftones—Ben Day, etc.)

	Unmounted	*Mounted on Wood*
Copper	$3.95	$4.74
Nickel	4.74	5.53

5½ in. by 8½ in. Lead Mould Electrotype (With Nickel Face)

Unmounted	*Mounted on Wood*
$5.53	$6.32

8½ in. by 11 in. Wax Mould Electrotype (Type—Line Cuts)

	Unmounted	*Mounted on Wood*
Copper	$5.58	$6.98
Nickel	6.98	8.37

8½ in. by 11 in. Wax Mould Electrotype (Halftones, Ben Day, etc.)

	Unmounted	*Mounted on Wood*
Copper	$6.98	$8.37
Nickel	8.37	9.77

8½ in. by 11 in. Lead Mould Electrotype (With Nickel Face)

Unmounted	*Mounted on Wood*
$9.77	$11.16

10 in. by 15 in. Wax Mould Electrotype (Type—Line Cuts)

	Unmounted	*Mounted on Wood*
Copper	$ 8.45	$10.56
Nickel	10.56	12.68

10 in. by 15 in. Wax Mould Electrotype (Halftones—Ben Day, etc.)

	Unmounted	*Mounted on Wood*
Copper	$10.56	$12.68
Nickel	12.68	14.79

10 in. by 15 in. Lead Mould Electrotype (With Nickel Face)

Unmounted	*Mounted on Wood*
$14.79	$16.90

In its February, 1931 issue, *Printing* EQUIPMENT *Engineer* published a report of the I. A. E. Standardization Committee in which it was recommended that plates for use as ad plates be made 0.105 in. thick and plates for patent base be made 0.154 in. thick, a slight tolerance plus or minus being allowable from the figures given in both cases. This action was hailed by prominent printers, electrotypers and press builders as one of the greatest forward steps undertaken in the printing industry since the adoption of 0.918 in. as the standard for type high among typefounders and composing machine manufacturers.

To the penalty imposed on the final cost of printed matter by reason of press makeready time caused by the use of wood-mounted electros, must be added also the new penalty imposed by the new scale for mounted electros. This is a matter in which every printer should be interested since there is a way, in many cases, by which he can avoid this penalty by adopting metal base in his plant.

It is pointed out in *Base Facts* by Editor Lee V. Augustine of the Printing Machinery Company that a much greater number of impressions may be obtained from metal base-mounted electros than from wood-mounted electrotypes. The claim is also made that by the use of metal base fifty per cent of press makeready and register time in the pressroom is saved over wood-mounted electros.

Electrotypers are interested in seeing that the finest possible results are secured from their product, the press builders prefer to work to precise standards and the printer should be happy to work with materials furnished within known limits, all of which will be reflected in lower production costs, and hence, a better product at reasonable prices will be delivered to the consumer.

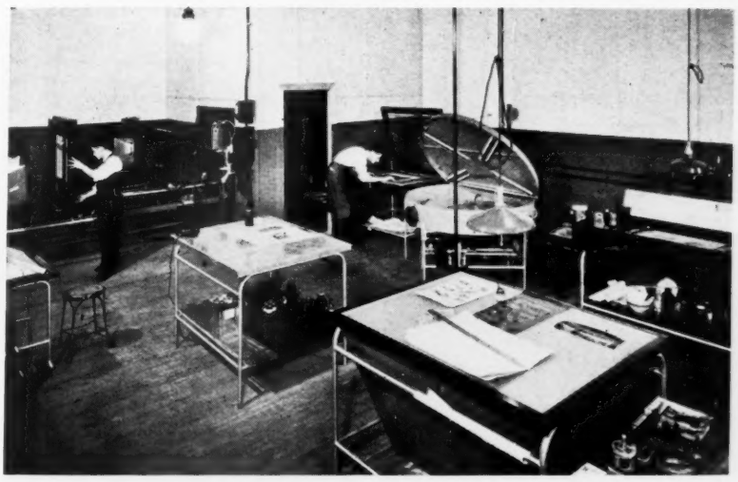
The matter of standardization in the printing and publishing industry is proceeding slowly, to be sure, but it is developing certainly, nevertheless.

Color Achievement in Chicago "Tribune"

IN THE March 15 issue of the Chicago *Tribune* appeared what is probably one of the finest specimens of run-of-paper color advertising that we have seen in any recent edition of a daily newspaper.

The page which was run as a promotional advertisement for the *Tribune* was printed under the title, "Color Makes the Mouth Water," and was done in red, yellow and blue ink. Various kinds of fruit with reproductions of canned goods made up into what we think are "bold and eye-compelling strokes of color." The register is excellent, the original subject having been executed in a sympathetic manner.

Printing EQUIPMENT *Engineer* congratulates John Park, Production Manager of the *Tribune* and mechanical staff, for this exceptional achievement.

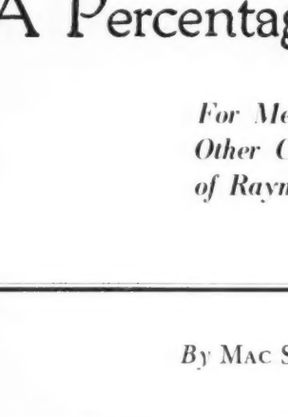


View of a modern planographic plate-making plant. Listing the various pieces of equipment it will be noted that the plant consists of a dark-room camera with scale focusing, the focusing being done out in the gallery; a vacuum printing frame, plate whirler, inking-up table, developing trough and retouching stand. The equipment for this plant was furnished by R. R. Robertson, Chicago, Ill.

Cost Distribution on A Percentage Basis

For Means of Comparison with Other Composing Rooms, Ideal of Raymond J. Richardson.

By Mac Sinclair



Raymond J. Richardson, Superintendent of Composing Room, Akron (O.) Times-Press, *discusses subject which is near the heart of every composing room executive.*

At the risk of being accused of plagiarism I am willing to discuss page costs with you," said Raymond J. Richardson recently in reply to the writer's request for some data about composing room operation. Mr. Richardson is composing room superintendent of the Akron *Times-Press*. Like other composing room executives, he does not believe that the ordinary "page cost" method used in many newspaper plants is a satisfactory method. Some means of figuring composing room costs which could be expressed in percentages on a unit basis, the sum of which would represent the total operation would be extremely desirable. His view in the matter is that a percentage system rather than one expressed in dollars-and-cents or in hours would make composing room cost intelligible between any two composing rooms even though widely separated geographically. Wage scales in different localities vary too much as do conditions peculiar to certain localities. At the present time the usual "page cost" system is of no use to anyone anywhere else except the organization which uses it.

COST STUDIES A HOBBY

When asked as to how he developed the system which he employs in connection with his work at the Akron *Times-Press*, Mr. Richardson stated:

"I got into cost studies because it appealed to me and became more or less of a hobby. As far back as 1910 I was operating combination newspaper and job plants under individual cost systems of my own. They were extensive and bulky and caused me hours of labor to keep up and to find the exact payroll costs. In some instances in those days we went farther and determined the floor space occupied by machines, heat, light, insurance, taxes, etc., and added all these to the total cost of the individual job. It seems to me there has never been any appreciation given to efforts to establish true costs in the printing business."

DEPARTMENTS SHOULD BE BUDGETED

The writer asked Mr. Richardson as to his preference in the matter of developing a cost system for universal use—one that would be intelligible in any composing room. He said:

"Some years ago, several articles of mine were published in trade journals, advocating the theory that page cost should be universally determined for comparative purposes. To do this, according to my idea, it would have to be founded upon a percentage basis of the total operation of the plant.

"Theoretically, my idea is that the total newspaper content and cost should be budgeted just the same as a business office or editorial departmental cost. In other words, if a composing room has fourteen or fifteen operating classifications, then each classification should be budgeted on a fractional percentage of the whole.

"Under a plan of this sort, the editorial department would be responsible if its setup percentage is exceeded in the com-

Thoughts Culled From Richardson Interview

A newspaper composing room cost analysis should be computed on a percentage basis. The computations may be figured from a standard number of operations expressed in units so that the individual unit percentage totals, as well as the grand total percentages will be instantly shown in order to make them comparable in the case of composing rooms which are widely separated from a geographical standpoint.

For his own personal protection the composing room superintendent should set up some kind of a cost system. He should also look forward to the time when he may employ a system which will give comparative costs with other plants throughout the country. It is possible that organization work and awakened publishers will bring about this happy condition.

A cost system should give credit for all departmental work done in the composing room which is not now apparent through the use of some of the present systems. It should also reveal excessive demands upon the composing room which strain its productive capacity.

A cost system imparts confidence to the composing room executive since by its use he can determine how to place responsibility for excessive departmental or other costs. Thus he will not succumb to the temptation of robbing Peter to pay Paul in order to effect economies. It will not be found necessary to skimp expenses in one department to balance excessive cost in another department for which the superintendent may not be responsible or those costs over which he has no control.

posing room by sending out too much copy, kill-outs, throw-away, or oversetting the paper. On the other hand, if a foreman is hiring too many men and the editorial requirements, which would be reckoned by volume, are in line with its budget, then the foreman is to blame for the excessive costs. The same applies to advertising inches, proofreading, store alterations (reconstruction), etc."

DISADVANTAGES OF ORDINARY SYSTEM

In reply to a question from the writer about the disadvantages of the ordinary "page cost" system, he said:

"Under the present plan of operation in many plants we all know that while the composing room superintendents receive the blame for excessive costs in their departments they are not to blame and have no control over costs unless, of course, they are incompetent executives. We are subject to the demands made on the composing room for production requirements whether it is necessary or whether it is due to carelessness or indifference in the business office, circulation, advertising or editorial departments.

"If an editorial executive sends a thousand columns of type to the composing room to be set and then afterwards decides to throw it away, it remains a composing room cost just the same and is subject to page cost reckoning under the present plan. Under the percentage plan it would be reckoned as production because of the records and would be entered into the percentage of the total operation of the composing room for the editorial department's budget setup, whether it went into the paper or not. When I speak of editorial department it goes for all departments—the advertising department included."

WEAKNESS OF SYSTEMS FOR COMPARATIVE PURPOSES

The writer suggested to Mr. Richardson that perhaps he had been placed in an unfavorable position through comparison of his costs with that of some other paper. He said this had occurred because costs over the country are determined in many and various ways. "However," he went on, "the report of one publisher's page cost, when low, does reflect unfavorably on the composing room executive in another plant whose page cost is comparatively high. If all the contributing factors were known, the chances are the higher page cost operator would be right in line with the lower page cost operator providing the requirements made on the two were relative and other conditions were alike.

"While all of us have various ideas about the individual operation and merits of the several systems, my observation is that most of them are too complicated. The man who conceives or installs any given system is familiar enough with its *modus operandi* but it sometimes takes a Philadelphia lawyer and much time and money to complete the cycle and arrive at the final cost figures. After this is all done, nothing has been accomplished because we have nothing for comparative purposes with other plants in other parts of the country upon which to base an argument.

"I feel that the page cost on this paper at the present time is comparatively as low as any paper in the state when it

COMPOSING ROOM DAILY RECORD

Edition Pages	Date	Make Overs
FIRST HOME	Total Advertising Inches	FIRST HOME
STAR HOME	Total Paper Space ..... New Space	STAR HOME
FINAL HOME	Est. Art and Standing Heads / Cols. / Est. Cols. of Set Type Used to Fill / Cols. Used	FINAL HOME
KENT-RAVENNA	Cols. Left Over / Cols. Killed Out	KENT-RAVENNA
STOCKS	Daily Departmental Material Left on Pank	STOCKS
SPORTS	News / Rural / Wmns. / Sports / Misc. / Mkts.	SPORTS
FINAL SPORTS		FINAL SPORTS
SUNDAY BULL		SUNDAY BULL
SUNDAY RURAL	Remarks:	SUNDAY RURAL
SUNDAY FINAL	.....	SUNDAY FINAL
EXTRA	See Record Below for Final Edition	EXTRA
Total Pages Sent In	Columns Added Today	Total Columns Used

Fig. 1.—The original of this form measures 3½ in. deep by 5½ in. wide, white paper. This blank provides a continuous daily record for edition pages, make-overs, overset and "kill-out" matter.

Fig. 2.—This form is 8½ in. deep by 7¼ wide, yellow paper. In the original form Mr. Richardson provides twelve blocks, each one representing a productive hour. Only three of the blocks are reproduced here on account of space limitations. Each hour is divided horizontally into 6-minute units as is indicated by the vertical column at the extreme left of the block. Each class of work is indicated by a key number at the top of each column. In Mr. Richardson's composing room there are thirteen separate operations upon which time is kept. The fourteenth column is used by each employe when engaged in work not coming under one of the regular classifications.

INDIVIDUAL EMPLOYEES PRODUCTION RECORD

Employee ..... Department ..... Date .....193.....

Payroll Cost per Shift ..... Lunch Period .....to..... Rate per Hour .....

	A.M. 6:00 P.M.														A.M. 10:00 P.M.														A.M. 2:00 P.M.													
Hour	KIND OF WORK														Hour	KIND OF WORK														Hour	KIND OF WORK													
Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	2	2	2	2	2	2	2	2	2	2	2	2	2	2	12	2	2	2	2	2	2	2	2	2	2	2	2	2	2	12	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	3	3	3	3	3	3	3	3	3	3	3	3	3	3	18	3	3	3	3	3	3	3	3	3	3	3	3	3	3	18	3	3	3	3	3	3	3	3	3	3	3	3	3	3
24	4	4	4	4	4	4	4	4	4	4	4	4	4	4	24	4	4	4	4	4	4	4	4	4	4	4	4	4	4	24	4	4	4	4	4	4	4	4	4	4	4	4	4	4
30	5	5	5	5	5	5	5	5	5	5	5	5	5	5	30	5	5	5	5	5	5	5	5	5	5	5	5	5	5	30	5	5	5	5	5	5	5	5	5	5	5	5	5	5
36	6	6	6	6	6	6	6	6	6	6	6	6	6	6	36	6	6	6	6	6	6	6	6	6	6	6	6	6	6	36	6	6	6	6	6	6	6	6	6	6	6	6	6	6
42	7	7	7	7	7	7	7	7	7	7	7	7	7	7	42	7	7	7	7	7	7	7	7	7	7	7	7	7	7	42	7	7	7	7	7	7	7	7	7	7	7	7	7	7
48	8	8	8	8	8	8	8	8	8	8	8	8	8	8	48	8	8	8	8	8	8	8	8	8	8	8	8	8	8	48	8	8	8	8	8	8	8	8	8	8	8	8	8	8
54	9	9	9	9	9	9	9	9	9	9	9	9	9	9	54	9	9	9	9	9	9	9	9	9	9	9	9	9	9	54	9	9	9	9	9	9	9	9	9	9	9	9	9	9
60	10	10	10	10	10	10	10	10	10	10	10	10	10	10	60	10	10	10	10	10	10	10	10	10	10	10	10	10	10	60	10	10	10	10	10	10	10	10	10	10	10	10	10	10

1 ..... Units at ..... Per Hr. $ .....
(News Composition — Machine)

2 ..... Units at ..... Per Hr. $ .....
(Layout — Marking Ads)

3 ..... Units at ..... Per Hr. $ .....
(Ad Composition — Machine)

4 ..... Units at ..... Per Hr. $ .....
(Ad Composition — Floor)

5 ..... Units at ..... Per Hr. $ .....
(Ad Corrections — Machine)

6 ..... Units at ..... Per Hr. $ .....
(Ad Corrections — Floor)

7 ..... Units at ..... Per Hr. $ .....
(Head Composition — Floor and Machine)

8 ..... Units at ..... Per Hr. $ .....
(Proof Reading — Editorial)

9 ..... Units at ..... Per Hr. $ .....
(Proof Reading — Advertising)

10 ..... Units at ..... Per Hr. $ .....
(Make-up)

11 ..... Units at ..... Per Hr. $ .....
(Classified Composition — Machine)

12 ..... Units at ..... Per Hr. $ .....
(Supervision — Non-Productive)

13 ..... Units at ..... Per Hr. $ .....
(Correction Bank — Distribution)

14 ..... Units at ..... Per Hr. $ .....
(Departmental and Other Work)

Remarks .....

Use No. 14 for class of work not listed and so state under remarks — time consumed will show under column 14.

comes to looking at the figures on the books of the business office and the auditors. However, to me, it doesn't mean a thing other than it offers a guide to go by from year to year for this particular paper. Even then it is immaterial because changes of ideas or policy create or lessen the volume of demands made upon the composing room.

"What I'd like to see is the page cost on another paper published under the same conditions, the same scale of prices, the same amount of overset or throwaway, same number of editions at the same time of day, same amount of store alterations, and the same kind and amount of machinery. Under the present system of determining page costs in many plants that's what one would need in order to make comparisons. You and I know this can't be done. Therefore, the present method must be all wrong."

COSTS UNDER PERCENTAGE SYSTEM EASILY COMPARED

"I take it then, that the remedy would be as you have suggested above—a cost system based upon percentages for all composing room operations?" said the writer.

"Yes," said Richardson, "the remedy would be to base costs of operation on inches of display advertising, column inches of news and classified matter produced, time spent on store alterations and any of the various other subdivisions of the composing room. Let each subdivision have a percentage of the whole operation set up as a budget upon which to work. Then it doesn't matter whether a paper is small or large or what the operation might be, the percentage will remain the same, unless someone gets out of line, in which case his errors will certainly show up immediately.

"While percentages might remain the same, or nearly so, all over the country, the costs might be greater or less, but this would be determined in the wage scale of any particular locality. After all, a man should be able to read as many proofs in Podunk as in Cleveland. Competent machine operators should be able to set as much type (news type) in Youngstown as in Akron or Toledo since the same kinds of machines are used. The same holds good all through the various departmental classifications.

"If however, we had a hundred pages a week in Toledo and six proofreaders were hired, and we had a hundred pages a week in Youngstown and ten proofreaders were hired, then the foreman would be to blame, according to the present methods. With the percentages system if six hundred columns of proofs were read in Toledo to produce one hundred pages and ten hundred columns of proofs were read in Youngstown to produce one hundred pages, the foreman would *not* be to blame. In this event the editorial department would be responsible because the percentage of news required to produce the paper in Youngstown would be much greater. (That's a lot of type to use in producing one hundred pages in any man's league, but it's an easy figure for illustrative purposes in this discussion.)

BUSINESS-MINDEDNESS AND PAGE COSTS

"Until newspaper executives generally become business-minded instead of fabricators of papers under editorial ideals, page costs shouldn't be discussed by them. They know it doesn't mean anything and they also know they are not going to harness these ideals. On the other hand, business executives do like to harp on composing room costs, but I have always felt that they don't want to know the facts.

"A writer once said in one of his articles in *Printing* EQUIPMENT *Engineer* that a newspaper publisher wouldn't pay a mechanical executive 10 per cent or 20 per cent of $100,000 a year if he could reduce costs to that extent, but he would pay a lawyer that amount to win a suit and furnish him all the assistance and personal effort possible to help win the case, because the publisher realizes he is not capable of doing it himself and is willing to pay the person who can. The inference is that the mechanical executive mustn't make that much a year because it would cause too much dissension among higher executives on the paper who are drawing less. These probably are not the exact words used by the writer but the idea is there."

Fig. 3.—This form is 8½ in. deep by 7¼ wide, blue paper. On account of space limitations, only two of the blocks are shown. There is a block in the original form for each working day in the week. The gross totals taken from the various Individual Employees Productions Records (Fig. 2) are transferred to this blank each week.

Chas. A. Dresser Passes On

Charles A. Dresser, vice president of the Cline Electric Mfg. Co., passed away suddenly from a heart attack, Saturday evening, March 10.

Mr. Dresser invented and installed the first push-button control for newspaper presses in the plant of the Chicago *Daily News*. A large number of patents were taken out in his name and this system of control was used extensively throughout this and other countries.

In 1912, Mr. Dresser became associated with the Goss Printing Press Company of Chicago as electrical engineer and in 1914 became vice president of the Cline Electric Mfg. Co., locating in New York in charge of the company's eastern business.

Mr. Dresser is survived by Mrs. Elizabeth Hollenbeck Dresser, whose many friends are sympathizing with her.

WEEKLY PRODUCTION COST RECORD

EACH DAY'S RECORD INCLUDES NIGHT CREW OF THE NIGHT PREVIOUS

Week Ending.....193.....

SATURDAY	Payroll Cost	WEDNESDAY	Payroll Cost
No. 1 — News Composition — Machine		No. 1 — News Composition — Machine	
No. 2 — Layout — Marking Ads		No. 2 — Layout — Marking Ads	
No. 3 — Ad Composition — Machine		No. 3 — Ad Composition — Machine	
No. 4 — Ad Composition — Floor		No. 4 — Ad Composition — Floor	
No. 5 — Ad Corrections — Machine		No. 5 — Ad Corrections — Machine	
No. 6 — Ad Corrections — Floor		No. 6 — Ad Corrections — Floor	
No. 7 — Head Composition — Floor and Machine		No. 7 — Head Composition — Floor and Machine	
No. 8 — Proof Reading — Editorial		No. 8 — Proof Reading — Editorial	
No. 9 — Proof Reading — Advertising		No. 9 — Proof Reading — Advertising	
No. 10 — Make-up		No. 10 — Make-up	
No. 11 — Classified Composition — Machine		No. 11 — Classified Composition — Machine	
No. 12 — Supervision — Non-Productive		No. 12 — Supervision — Non-Productive	
No. 13 — Correction Bank — Distribution		No. 13 — Correction Bank — Distribution	
No. 14 — Departmental and Other Work		No. 14 — Departmental and Other Work	
No. Pages Payroll Cost Payroll Page Cost		No. Pages Payroll Cost Payroll Page Cost	

PAYROLL COST BY DAYS

Mon..... Thurs..... Payroll for Week.....

Tues..... Fri..... No. Pages for Week.....

Wed..... Sat..... Payroll Page Cost.....

1934 Ayer Award

The New York *Herald-Tribune* on April 8 was awarded the Francis Wayland Ayer Cup for typographical superiority in the Fourth Exhibition of Newspaper Typography conducted by the Ayer Galleries. This is the second time the *Herald-Tribune* has taken the sweepstakes prize.

In addition to winning the cup in competition with 1,485 daily newspapers the *Herald-Tribune* received first honorable mention in the division comprising newspapers of 50,000 circulation and over in which there were 130 entries. The Milwaukee *Journal* received second honorable mention in this division and the Des Moines *Tribune*, was awarded third honorable mention.

Among 372 newspapers of 10,000 to 50,000 circulation, entered, first honorable mention went to the Sheboygan (Wis.) *Press*, and second to the *Herald-Statesman*, Yonkers, N. Y. The Appleton (Wis.) *Post-Crescent*, and the Chattanooga (Tenn.) Daily *Times*, tied for third place.

The Evening *Tribune-Times*, Hornell, N. Y., received first honorable mention among the 984 papers entered in the division of papers under 10,000 circulation. Second honorable mention went to the Peoria (Ill.) *Transcript*, and third to the Athens (O.) *Messenger*.

The jury was composed of Dr. Ralph D. Casey, chairman of the Department of Journalism of the University of Minnesota and former president of the American Association of Schools and Departments of Journalism; Henry R. Luce, editor of the magazines *Time* and *Fortune;* and Laurance B. Siegfried, editor of *The American Printer*.

Each entry was examined by the jurors and judged as to typography, including the selection of type, display values and spacing; make-up including distribution of display units, balance, accessibility of news and advertisements; and presswork, including impression, uniformity of distribution, and general legibility of the page.

The cup and certificates of award to papers receiving honorable mention will be presented representatives of the papers by Wilfred W. Fry, president of N. W. Ayer & Son, Inc., at a dinner in Philadelphia next month. All papers entered in the contest will be on public exhibit in the Ayer Galleries during the month of May.

Papers in the highest circulation group which survived up to the final elimination were: The Christian Science *Monitor;* The Cleveland *Press;* Des Moines *Tribune;* The Detroit *Free Press;* The Evening *Sun*, Baltimore; The Milwaukee *Journal;* The New York *Herald-Tribune;* The New York *Times;* Newark Evening *News;* The *Times-Picayune*, New Orleans.

"Globe-Democrat" Now Using Press Color Units

Advertisements in black and one color are now being printed in the black-and-white sections of the St. Louis *Globe-Democrat*. The installation of new press units has been completed for this purpose.

The new units have been applied to the *Globe-Democrat's* Duplex presses, which were installed in the new building of the paper. The Sunday magazine and Sunday comics have been printed in four colors on the Goss presses since the *Globe-Democrat* moved into the building.

The black-and-white Duplex presses were not originally equipped for a second color, but in December, 1933, five complete units were ordered to supplement them with color. Adapted directly by the Duplex Printing Press Company to the present presses, this new equipment employs the same type of plate cylinder as is used in black and white printing, enabling the second color to be added without sacrifice of facilities or of speed. These color units are capable of precise register, tests having shown the possibilities of unusual effects which may be obtained.

Ludlow Slotted Crucible Mouthpiece

—Has Been Developed to Permit Casting More Solid Slugs with Improved Type Face — Metal Oxidation Reduced

By DOUGLAS C. MCMURTRIE*

THE quality of face and the solidity of slugs is of importance to every mechanical executive concerned with slugline composition. It may, therefore, be of interest to describe in some detail several mechanical improvements on the Ludlow which have been responsible for a marked betterment in the quality of slugs produced.

For a generation every slug-casting machine has delivered the hot metal to the mold chamber through a mouthpiece pierced by a succession of round holes. As a result of exten-

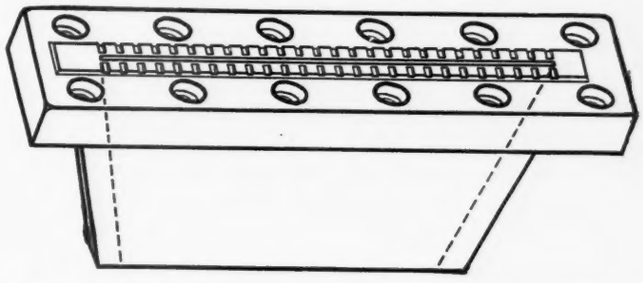


Fig. 1.—The Ludlow mouthpiece carries a slot extending throughout its casting range instead of the jets previously employed. The metal ejected by the pump from the mouthpiece enters the mold in the shape of a thin ribbon. The tapered extension back of the mouthpiece conducts heat to the mouthpiece so that when the machine casts continuously it will assist in melting metal for the next cast, as well as reducing the surface of the molten metal which is exposed to oxidation while the machine is standing idle.

sive research by Ludlow engineers, a mouthpiece has been adopted, the orifice of which is a continuous slot through which the metal passes in a thin ribbon. An orifice of this shape tends to hold the metal together, rather than break it

*Director of Typography, Ludlow Typograph Company, Chicago, Ill.

Articles of Great Value

Printing Equipment Engineer,
Cleveland, Ohio.

Your magazine is great and I hope you will write more articles on line-casting machines like the one I refer to here. They are of great value to me and I wish to thank you for them.

Cordially yours,
V. O. WILLIAMS, *Machinist,*
Illinois State Register.

up through a number of independent jets. The result, we feel, has been to improve solidity of slug and quality of face.

The slotted mouthpiece shown in Fig. 1 is now standard equipment on the Ludlow and, together with other parts required, can be installed on the majority of machines in the field without difficulty.

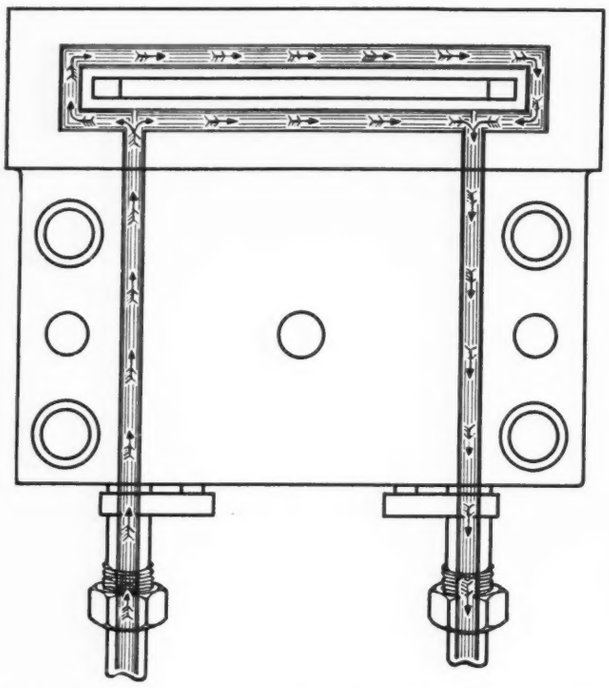


Fig. 2.—Ludlow double water-cooled mold. With the slotted mouthpiece shown in Fig. 1, it was found to be desirable to maintain the metal at a higher temperature. This double water-cooled mold was developed to permit the use of metal at a higher temperature, and it is claimed, imparts a more uniform cooling action to both sides of the slug to avoid distortion.

The vents shown in the face of the mouthpiece are deep, permitting the air to escape freely from the mold cavity, and contributing materially to the solidity of the slug.

The orifice is fed by a funnel-shaped duct immediately below, which reduces the air space above the metal level and also reduces the surface of the metal exposed to oxidation when the machine is idle and the metal is melted ready for use at any time. This part also permits more heat to be conducted to the upper surfaces of the mouthpiece and when casting continuously assists in melting the metal in sufficient time for the next cast.

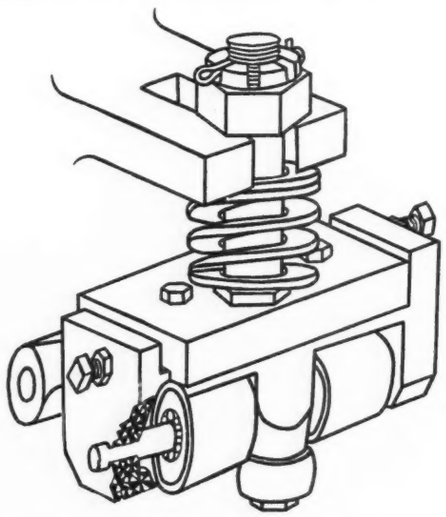


Fig. 3.—Ludlow pot cam rollers and pot support. The strength of the spring in the pot support has been increased to compensate for greater pot pump plunger pressure which prevents danger of the pot and mold being forced away from the matrix line during the casting operation.

With the new Ludlow slotted mouthpiece it was found desirable to run the metal at a higher temperature, especially when casting with a 12-point mold. To permit the use of metal at a higher temperature, the first "double" water-cooled mold has been developed. This mold is cooled by a water duct completely encircling the casting chamber. This mold (shown in Fig. 2) permits hotter metal to be used and imparts uniform cooling action to both sides of the slug so as to avoid distortion. The arrows indicate the direction of the water as it flows around the casting chamber.

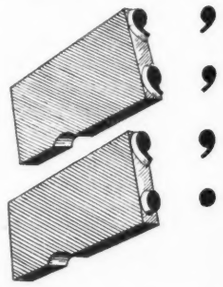
The mold is of unique construction, made of a new special steel and is hardened and tempered throughout. This prevents scoring of the bottom turface and also eliminates the burrs that form on the bottom of the slug when the slug is ejected. The water passages are so located as to distribute the water proportionately to the cooling area involved. This mold has more than double the cooling capacity of the Ludlow mold previously in use.

To use greater plunger pressure, thus creating further improvement in the quality of slugs, and avoiding the danger of the pot and mold being forced away from the matrices while casting, thereby producing over-height slugs, the strength of the spring in the pot support has been increased. The crucible is supported by two rollers, equipped with needle roller bearings, which roll on each side of the cam, thus eliminating almost entirely the wear on the cam itself. The new mechanism, shown in Fig. 3, also makes possible quick adjustment of the lock-up and maintains it for a longer period of time. The three elements in the slotted mouthpiece combination represent, it is believed, a distinct advance in composing machine engineering.

"Qucom" and "Quper"

S. J. Culotta, a monotype operator at the Faithorn Corporation, Chicago, Ill., has devised two new type characters called "Qucom" and "Quper."

Mr. Culotta has combined a comma with a quotation mark and a period with a quotation mark each on a single type body. He feels that these characters provide an advancement in modern typography by not alone eliminating a controversial subject in every proof room, but also by improving the appearance of the printed page.



In explaining his idea, Mr. Culotta said (We refrain from using quotes as ordinarily employed in like cases):

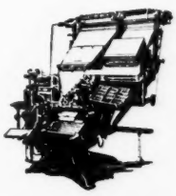
An "evil" which has been tolerated in the composition of type, and has been outstanding in detracting from the nicety of type composition, is the use of commas and periods cast on separate bodies, either preceded or followed by a pair of quotation marks—causing an otherwise properly spaced line to appear unequally spaced on account of the white space above the comma or period and the space below the quotation marks: i. e. —," —." —", —". This form of usage is especially an eyesore when a comma or period and quotation marks are at the end of a line or when several short, quoted phrases are used in sequence in a single sentence. *Example:* "Rhapsody in Blue", "Aloha", and "Desert Song".

THE COMPLETE COMPOSITION SYSTEM

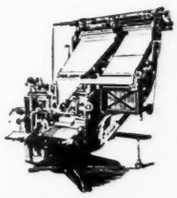
TRADE LINOTYPE MARK

A
B
C
D
E F
G H
I J
K L
M N
O P
Q R
S T
U V
W X
Y Z

5 PT. TO 144 PT.



SINGLE DISTRIBUTOR LINOTYPE
for ordinary composition requirements.



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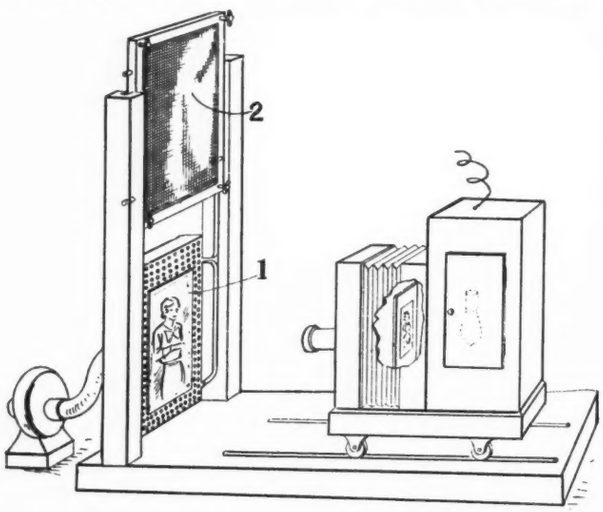
Projection in Plate Making

Development of Projection on Sensitized Paper Directly to the Metal Printing Plate Traced by Writer

By FRANK O. SULLIVAN

THE constant improvement, now apparent in all businesses throughout the country, offers many opportunities to the enterprising lithographer. This is especially true if he has the vision, and is willing to adopt new machines and new methods, to facilitate the output of his plant in a more economic manner.

The foresighted ones in this age of machinery are taking advantage of it in every possible way. Obsolete machinery is being replaced with new and up-to-date equipment—new



One of the forerunners of the sensitized offset printing plate, even though it was a transferring process. This is a diagram of a projection apparatus, a patent for which was granted George N. Pifer, Cleveland, in 1920. The sheet 1 bearing the image of the girl is a sensitized sheet of gelatin-coated paper, held in place by a vacuum board. The image on the negative was projected through a screen 2 (which is shown in an elevated position) to the sensitized paper which was afterwards transferred to the surface of the printing press plate. After employing the Pifer method for a time, users began to experiment in an attempt to project directly on the sensitized surface of the printing press plate.

presses, new photomechanical units, as well as new methods are being incorporated in the lithographer's plan for immediate and future business.

Among the new developments—and this is going to be of prime importance to the lithographing industry—is that of *projection*. The writer is frequently asked: "What is projection? What will it accomplish in the modern plant? What is its economic value? What are its present and future possibilities?" It will be the purpose of this and other articles following, to tell you briefly and concisely just what projection will mean to the lithographer whose product fits in with the important subject of projection.

There will be no fear of contradiction in the statement that—it has been the dream of the average lithographer, especially to the one who produces display lithography, that some day he would be able to transfer the image on a small negative—any size required—direct to the sensitized surface of a printing press plate without any intermediate steps. Such a dream has come true, and today images in one color or multi-color, are being projected to the printing press plate, not only in exact register, but also at an economy that is surprising to the user.

Many attempts have been made, and many patents have been issued on projection, and there have been many failures. In the earlier attempts to project the inventors neglected to solve just one important and essential factor in the successful performance of their apparatus—the relation between mechanics and light. Until that was solved and the proper light adopted, projection was a failure.

According to the records of the Patent Office in Washington, the first application for a patent bearing on this subject, was made by Frederick C. Whippey of Cincinnati, Ohio. Under date of Sept. 3, 1903, (Ser. No. 171,753) he filed application for a patent on "Method of Making Printing Plates." The patent was granted April 5, 1904.

This patent, however, so far as making lithograph plates was concerned, was a transferring process. We quote from Whippey's description: "It will be obvious, however, to those skilled in the art that this transferring surface can be manipulated in a different manner where it is desired to reproduce a picture by the lithographic process instead of direct impressions from the backing-plate. This is well known to lithographers; but in order that the practice may be understood I will briefly describe it here. Assuming that the transferring surface is inked and washed, as before described, it will be necessary to transfer the exposed portions of the plate to the stone or other suitable material for lithographing purposes. This is done by first coating the exposed surface with gum arabic and water, after which the protective coating of ink on the exposed surface is washed off, usually by the use of turpentine. The transferring lithographic ink is now coated over the entire surface, so as to cover the exposed as well as the unexposed surfaces of the plate. Water is now employed to again wash the plate and acting upon the gum-arabic all ink from the unexposed portions of the plate will be removed, leaving the transferring ink on the exposed portions which were formerly covered by the protective ink. A sheet of transfer paper is now placed over the plate to take an impression." This impression on the transfer paper is then transferred to the surface of the printing press plate, and treated in the usual lithographic manner to prepare it for the press.

According to the Patent Office records, the next applicant for a patent on projection was Virgil Lamb, also a resident of Cincinnati, Ohio, and an employe of the Hennegan Lithograph Company. Lamb's application bears date of Dec. 23, 1903, (Ser. No. 238,044), and was issued in 1905.

For three years Lamb's idea was experimented with in the Hennegan plant without any material success, and was finally abandoned. Had Lamb, at that time, understood the kind of light required for successful projection it would undoubtedly have been a success. A high actinic ray of concentrated light is absolutely essential where a perfect printing plate is required. A plate so made will outlast any plate and by the contact method, with the possible exception of the so-called "deep-etch" plate.

It was not until June 11, 1917, that George N. Pifer, of Cleveland, Ohio, laid the foundation for what was to be a perfectly successful projection apparatus. His application on the above date (Ser. No. 173,954) was on "Photographic

Continued on page 21

Eliminate Errors • • • •
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"POST-GAZETTE," Pittsburgh, Pa.—". . . the cleaner is wonderful."— *James Stirling, Foreman.*

"WASHINGTON DAILY NEWS," Washington, D. C.— ". . . results highly satisfactory . . . machinist enthusiastic . . . found no injury to mats, magazines or cams . . . false-walls not touched . . . consider good investment"— *Roy B. Hood, Supt.*

"JOURNAL," Jamestown, N. Y.— "performs well work for which intended . . . consider useful and valuable."— *H. M. Hall, Pubr.*

"NEWS-JOURNAL," Wilmington, Del.—". . . does what is claimed . . . simple and easy to operate . . . consider old way as obsolete as beating in a wet mat . . . machinist would not want to be without it."— *R. M. Megginson, Supt.*

CANADIAN GOVERNMENT PRINTING PLANT, Ottawa, Ont. (largest user) —". . . yes, we use it — have for the past year — and find it the most satisfactory."— *Jno. J. Brennan, Foreman Lino. Dept.* (Answer to a Daily which inquired of him.)

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Statistics show that the majority of line-casting machine errors consist of transpositions, missing letters and double-letters — caused by dirty, sticky mats, magazines and cams. The "KLEAN-O-MAT" Process *gets at the source* of such errors — and *prevents* them.

"KLEAN-O-MAT" Process also gives your operators *maximum visibility*, besides imparting a pleasant finish that reduces eye-strain. Operators, machinists and foremen, in "KLEAN-O-MAT" equipped plants, enthusiastically endorse "KLEAN-O-MAT" benefits and economies. Give *your* men this equipment — *now* — you'll profit handsomely.

•

"Klean-O-Mat" Compound is a Solvent. It does NOT harm brass or "false-walls." It is tested and we Guarantee it.

•

Running mats out to clean them (and magazines) is as obsolete as wet mats — *and more costly*. Hours are wasted and results are not satisfactory. With "KLEAN-O-MAT" you merely transfer magazine (full of mats) to "KLEAN-O-MAT" tank; pour in compound; run machine 15 minutes; drain; rinse; then place in drying cabinet. The second magazine cleans while the first is drying — giving you *a clean magazine every 30 minutes*.

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Analysis of Errors Causing Makeready

In Printing Materials from Composing Room to Pressroom Concluded — Makeready is Extra-Pressroom Activity

By H. W. HACKER*

IN THE March ENGINEER, Mr. Hacker defined makeready as "compensation for errors in dimensions in forms and presses." He also explained that these errors of dimension in printing materials are easily measured and may be as easily expressed in thousandths of an inch by means of equipment created especially for the purpose.

A synopsis of the factors of makeready was given. These factors divide naturally into three groups: There is legitimate makeready which can only be done at the press; illegitimate makeready which is error of dimension and which can be prevented by systematic inspection, and premakeready, which is some form of advance plate treatment.

Analysis of and methods for control of errors in type, rule and electro plates were given. Continuing, Mr. Hacker analyzes the other six factors of makeready. He also makes suggestions for pre-makeready in the large and the small printing plant.—ED.

II

TREATMENT OF BLOCKED PLATES

4. *Controlling Errors in Blocked Plates.*—This is at once the commonest and the greatest error found in forms. Blocks are grossly over-size or under-size. Old blocks have swelled or shrunk.

Often printers have no control over this situation. Blocks in all conditions are delivered to them by the customer and they must accept them.

There are three methods of levelling mounted plates before sending them to press: Underlay by plate gauge, trimming down by planer, underlay or interlay by test press.

The interlay is by far the best since it permits a mark-out relief according to the subject but it is not in very general use on account of the time and hazard of dismounting and remounting.

In combination with the plate gauge the type-high planer is an invaluable tool.

The plate gauge measures plates under printing pressure and in such manner as to permit underlaying to such accuracy as to dispense entirely with levelling on the bed of the press.

HUMAN ELEMENT IN MAKEUP

5. *Controlling Errors in Make-Up.*—The finger pressure test of a page in a make-up galley is both insufficient in amount and variable in amount. Compositors are skillful but their make-up is not uniform. The proof of this statement is in the time spent on stone justification, stone line-up, press shifts for position and register, and press work-ups. Lateral errors of dimension, in one form or another, is the reason.

Correction of most of these errors is now possible at the source, viz, in the original page make-up. A new tool, the Make-Up Gauge, enables compositors to get their work right the first time. Pages will be exactly square, all of exactly the same size, all justified to lift under the same lock-up pressure. Different men (in themselves) cannot work to different pressure nor different measure. Moreover, there is a device by which to check all internal alignment and with which color pages can be actually made up in register.

Not only does this save a vast amount of stone work but what is more important, it saves a vast amount of press delays from lining shifts, register shifts and work-ups.

The Make-Up Gauge is a new invention of real significance. It introduces precision for the first time into a branch of the Art which has changed but little in 400 years.

CONTROLLING ERRORS IN PATENT BASES

6. *Controlling Errors in Patent Bases.*—Bases are either the right height or they are not the right height. It is very easy to measure them and find out. Those which are not the right size cost more money to keep than to discard, since they are a perpetual cause of makeready.

The standard is 0.759 in. New bases are generally good. All the manufacturers will supply them to a tolerance of plus or minus half thousandth if specified.

Old equipment contains many bad blocks. Efforts have been made to regrind them but that is not very practical for a number of reasons, chiefly because it must leave them below standard. They can be sorted as for example into bedsfull of the 0.760 in. blocks and other bedsfull of the 0.758 in. blocks. This would save makeready but it has the same objection of several sizes which are certain to become mixed sometime.

The most practical thing is to make a systematic inspection of all bases with a Plate Gauge, throw away at once those that are over 0.760 in. and those which are under 0.758 in., and then make very sure that no new base equipment which is not 0.759 in. gets into the plant.

PRESSES AND THE CONTROL OF ERROR

7. *Controlling Errors in Presses.*—New cylinder presses may be relied upon generally as being very accurate. Old presses were not made so well and have suffered through use. New or old, all presses are exposed to accidents, abuse or neglect which destroys their impressional accuracy. While the percentage of such errors is small, the errors assume importance because they are always present and always require a certain amount of press makeready.

Beds may not be exactly flat nor cylinders round and straight but the commonest faults are unequal track supports, uneven bearers, and holes in cylinders from accidental running of tools through the press.

If impressional defects are known or suspected the first thing is an overhauling by a qualified service man, preferably from the manufacturer. After the repairing and readjusting process, true impressional accuracy can be restored by the following measures known as Press Correction.

A form of test blocks of great accuracy and made especially for this purpose is placed in the bed and a proof pulled. This proof discloses clearly every break of impression. A mark-out overlay is made in the usual manner and hung permanently on the cylinder near the bottom. Thus, the errors in that press are corrected once and for all.

These test blocks are indestructible. They should be used to make periodic inspection of presses at least once a year.

This is a good place to mention Hard Packing. Soft packing is a concession to error. As form errors come under control and the level of accuracy is lifted, the adoption of hard packing becomes possible and results in less press makeready, less plate wear, less embossing and sharper definition in the printed sheet.

Hard packing in this connection may be defined as 0.035 in. to 0.040 in. of paper over metal. A sheet of offset zinc, or monel metal, is hung on the cylinder about 0.040 in. below the top. Press builders are all working in the direction of less cylinder packing but they dare not go too far or too fast for they know the troubles their customers would run into because of uneven forms. If and when the industry achieves level forms new presses will have less and harder packing.

PRESS PACKING IS AN ELASTIC

8. *Errors of Compression of Packing.*—The packing on cylinder presses, whether 0.050 in. or 0.090 in., whether hard or soft, must be regarded as elastic. And necessarily so. If it were solid metal, a clean job of printing would be impossible because of minute and uncontrollable imperfections in forms.

This elasticity is uniform throughout the cylinder and bears equally on solids and highlights. Whether we talk "kiss" impression or ink absorption, the fact remains that it takes pressure to print in letterpress. A given area of shadow dots, being dense, requires more squeeze to pick up ink than an equal area of highlights which are open. But they receive the same squeeze, and it is either too much for the highlights or not enough for the solids.

This is one of the three legitimate reasons for true makeready. The impression must be adjusted to the highlights and the solids must then be reinforced by either cylinder overlay or by plate underlay, or by actually raising the solids of plates above the highlights through some mechanical treatment.

SECOND REASON FOR TRUE MAKEREADY

Right here another factor enters. Cylinder packing is elastic but imperfectly so. It compresses under the repeated pound of impression. The

*President, Hacker Manufacturing Company, Chicago, Ill. Copyright 1933, by H. W. Hacker under title of "Cause and Prevention of Makeready."

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That Means

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A GREAT MIDLAND NEWSPAPER reports that its special edition cost nearly $10,000 for materials and wages of craftsmen. Of that amount, it is doubtful if as much as $5 represented the costs of the dry mats used.

FIGURE OUT FOR YOURSELF the mat cost per paper and yet mat quality is a vital factor in every page — to promote or to mar reader attention, reader interest and ultimate reader loyalty.

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heavy portions emboss. And this is the second legitimate reason for true makeready. It is met in the same way by inserting material either over or under the solids, the two purposes merging into the one operation. (Under the heading of Controlling Errors in Electrotypes we have already described the methods of relief underlay by test press.)

ORIGINAL PRE-MAKEREADY

Top makeready is as old as the printing art. It is costly because it holds the press idle. Putting makeready into the plate, that is, raising the solids above the highlights, was originally developed as the only out for multicolor wet printing where the color plates all strike the same spot on the impression cylinder and overlay is impossible. But in recent years it is being used as pre-makeready economy on flat beds and single colors.

The first was the McKee Process developed by C. B. Cottrell & Sons Co. A proof with the solids cut out is registered to the front of the plate. A proof with the highlights cut out is registered to the back of the plate. Hydraulic pressure then squeezes the solids up and the highlights down.

There have been numerous similar attempts at surface treatment and they all represent efforts to prevent press makeready. As yet they are not within the reach of small shops since they require expensive organization.

Important as are these moves to put makeready into plates, let it be emphasized that they can only come *after* dimensional accuracy is achieved and that dimensional inaccuracy is still the major cause of makeready.

BEAR-OFF AND CYLINDER SPOT SHEET

9. *Errors of Bear-Off.*—This is the third legitimate reason for true makeready. Forms are infinitely variable. Plates occur in all possible groupings. Owing to spring of parts, the heavy portions bear-off on the lighter portions. There is but one possible way to compensate this inequality and that is by a cylinder spot sheet.

THREE KINDS OF MAKEREADY

There is the whole picture of makeready. Standing off and surveying it, we find that the 9th item (bear-off) can only be handled at the press by spot sheet; the 8th item (packing compression) can be handled *in part* by various kinds of advance plate treatment and *in part only* by press makeready; the remaining seven items all represent dimensional error, six of them in respect to makeready and one in respect to lock-up, line-up, work-up, register, every one of which can be controlled and prevented.

SHIMMING AND FITTING FORMS ARE NOT FUNCTIONS OF PRESSMAN

Notice the preponderance of error as compared to true makeready. The fact is that pressmen spend a majority of their makeready time shimming and fitting forms to presses, work which they should be spared and which somebody earlier along the line can do better. Under proper control and organization a single spot sheet should start an average job on a cylinder press.

MAKEREADY EXPRESSED IN TERMS OF SIZE

Let us now present some general conclusions based on the foregoing analysis of causes.

It is clear that a mental conception of dimension as the common denominator to all the factors of makeready is of first importance. To think in terms of size is to think to the heart of the makeready problem, since every such problem can be readily broken down into measureable dimension. When this idea becomes firmly planted in the minds of craftsmen and executives, makeready will disappear as a major item of cost.

FIXING TOLERANCES RAISES QUALITY

It is clear that in the purchase of supplies the adoption of standards and the fixing of acceptance tolerances will at once lift the level of quality of such supplies. If you are equipped to measure and inspect, and if you do measure and inspect, your supplier will soon find ways of meeting your requirements. You will get just the kind of plates or composition or bases that you insist upon. All you have to do is to check them in when up to standard and refuse them when not.

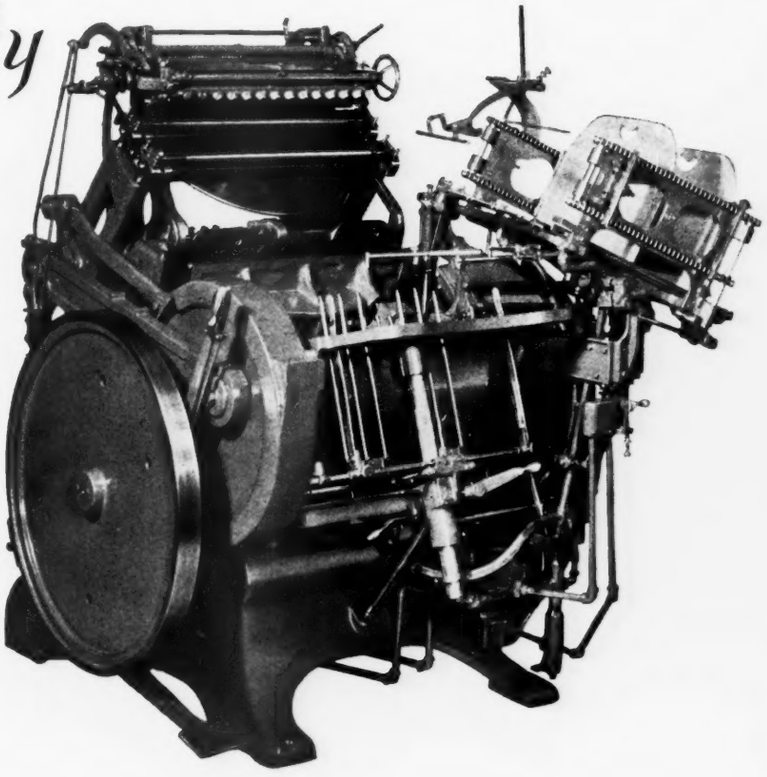
WRITER COMPLIMENTS PRESSMAN

It is clear that the pressman is not to blame for makeready. He has no authority over the contents of forms and but rarely of the condition of his press. He takes what is

Continued on page 33

FOR THE LARGEST POSSIBLE VARIETY OF PLATEN PRESSWORK • • • THE 14½ x 22

Heavy Duty Craftsman Press



FROM general job printing to three- and four-color process work . . .

From embossing and hot stamping to die-cutting, scoring and creasing . . .

From light-weight parchment to heavy wallboard, boxes, cartons, wood rulers, fans, novelties, odd shapes . . .

The 14½ x 22 Heavy Duty Craftsman Press takes these jobs as they come — feeds them automatically — turns out the highest quality of work at production speeds (up to 2300 impressions per hour) that make real profits possible.

In those commercial printing plants where difficult jobs are the rule, this press provides the emergency capacity to keep production flowing smoothly. Besides, in many cases it saves the investment in special equipment that would otherwise be necessary.

For bookbinders, box-makers and other specialty plants, its impressional strength is amply sufficient for much of the regular run of stamping, embossing and other specialty work. Its thorough ink distribution and accurate hair-line register insure results of which any plant may well be proud. Its automatic feed provides lower-cost production than can be had from slower hand-fed equipment. And where used solely for die-cutting, scoring or creasing, the 14½ x 22 Heavy Duty Craftsman Press may be purchased without the inking mechanism.

Write us for names of owners near you, so that you may see this press in operation for yourself. Also send us samples of the work you have to do. We'll gladly give you, without obligation, our opinion as to whether it can be produced efficiently and economically on the 14½ x 22 Heavy Duty Craftsman Press. The Chandler & Price Company, Cleveland, Ohio.

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CHANDLER & PRICE PRINTING PRESSES
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Patents For Printing Art

Anti-Offset Mechanism for Printing Presses and Process for Mercurized Printing Plates Among Patents Granted

MARCH-APRIL

Printed Copies of Patents Are Furnished by the Patent Office at 10 Cents Each. These May Be Obtained by Addressing the Commissioner of Patents, at Washington, D. C.

1,944,359. SLUG CASTING MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application July 1, 1932. Serial No. 620,414. 13 Claims. (Cl. 199 — 47.)

1. In or for a slug casting machine, a metal pot having a throat section built up of a plurality of separately formed parts and provided with a passage through which molten metal is adapted to be forced into the mold, the surfaces defining the passage being made smooth to prevent the accumulation of metal thereon.

1,944,519. OFFSET ALIGNING TYPE-MATRIX HOLDER. Philip P. Merrill, Evanston, Ill., assignor to Ludlow Typograph Company, Chicago, Ill., a corporation of Illinois. Application October 26, 1932. Serial No. 639,717. 18 Claims. (Cl. 199—47.)

1. A type-matrix holder comprising a member in which the matrices are positioned to extend in a line and having opposing parallel side wall members one of which is movable toward and away from the other into different set positions, means whereby the movable side-wall member, in its movements, is maintained parallel with the other of the side-wall members and means for holding the movable side-wall member against movement in either direction out of any position of adjustment while permitting removal of the matrices.

1,944,728. MATRIX MOLDING PRESS. Ernst Brockel, Augsburg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg A. G., Augsburg, Germany, a corporation of Germany. Application December 22, 1931. Serial No. 582,530, and in Germany December 27 1930. 4 Claims. (Cl.101—12.)

1. In a hydraulic molding press, a guide piston slidably mounted for only straight line movement, a separate pressure piston yieldably mounted on the guide piston, means for the actuation of the guide piston to move the pressure piston therewith to an operative position, and separate means for the subsequent actuation of the pressure piston independently of the guide piston.

1,944,852. LINE COMPOSING AND TYPE CASTING MACHINE. Samuel E. Sperry, Hollis, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application November 9, 1931. Serial No. 574,003. 14 Claims. (Cl. 199—50.)

1. In a line composing and type casting machine, a vise for presenting a matrix line to a slug casting mold comprising opposed jaws both movable toward and from each other to close against the ends of a matrix line, means connecting the jaws for causing them to move equal distances toward one another to center a matrix line lengthwise relatively to the mold, justifying means for expanding spacebands in the line, and means mounted on the justifying means and common to both of the jaws for locking the jaws in line-closing position and for forcing the jaws toward one another to clamp a matrix line endwise.

1,945,136. WEB TENSION MECHANISM FOR PRINTING PRESSES. Allan J. Cline, Chicago Ill. Application August 7, 1930. Serial No. 473,543. 20 Claims. (Cl. 242—75.)

1. In a web supply mechanism for printing presses the combination of a rotatable support for a running roll and a spare roll whereby the rolls may be revolved about the axis of the support, and strap tension mechanism for controlling the travel of the web from the roll into the press, the mechanism being supported upon and movable with the roll supporting means and including means for causing the tension to be released from one of the rolls when applied to the other.

1,945,231. DUSTING BOX FOR THERMOGRAPHIC PRINTING. George W. Raabe, Sioux Falls, S. D. Application March 3, 1932. Serial No. 596,610. 7 Claims. (Cl. 41—1.)

2. A method of multi-colored thermographic printing which consists in printing the design in size on the material to be printed, inverting a case having compartments containing different colored, fusible powders on to the sheet to cause the different colored powders to be applied to different colored appropriate portions of the design, then returning the case to its initial position and removing the sheet and then simultaneously fusing all of the powders.

6. Means for applying differently colored powders to designs printed in size comprising a dusting box having a number of transverse partitions dividing the box into a plurality of transversely extending compartments, and a plurality of partitions disposed at an angle to the first named partitions, and dividing the interior of the box into a plurality of compartments, each of which is adapted to contain a colored powder, and a cover hinged to the box and having an elastic mat on its inside face and adapted when closed to force a sheet of paper into tight contact with the walls of the compartments and the wall of the box whereby to apply the colored powder to selected portions of the sheet when the box is inverted.

1,945,253. MACHINE FOR FOLDING AND FEEDING BOOK SIGNATURES. Roy C. Baker, Wollaston, Mass. Application July 7, 1931. Serial No. 549,179. 10 Claims. (Cl. 270—37.)

1. The combination with a signature fastening machine having a movable saddle, of a signature folding and feeding machine having a saddle aligned with the movable saddle in the initial position of the latter, and means for folding a signature and feeding the same along the second-mentioned saddle toward the first-mentioned saddle.

1,945,417. MATRIX-SETTING AND TYPE-LINE-CASTING MACHINE. Wilhelm Blume, Berlin-Tegel, Germany, assignor to firm Typograph G. m. b. H., Berlin, Germany.

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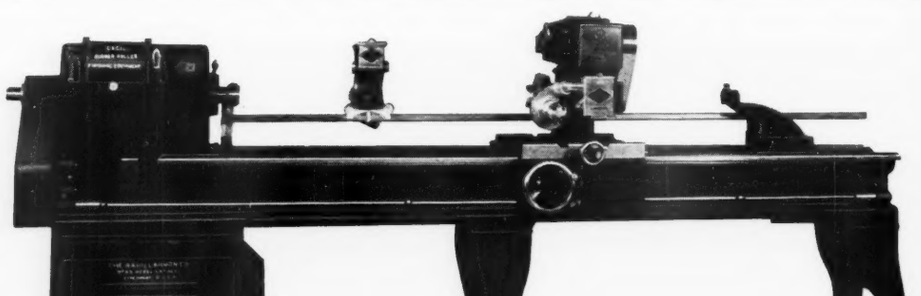
NEW CECIL
SERIES "J"

Roller Finishing Equipment



Accurately—Dresses and Polishes Rubber Rollers without removing them from Machine

Finish rubber rollers *easily*, *efficiently* and *economically* in your own plant with this new Cecil Series "J" complete Rubber Roller Finishing Equipment.

The Series "J" Machine is specially designed to dress and polish rubber rollers. It is of rigid construction, with a low center of gravity and requires only 35 minutes to run a cut across a roller of 72-inch face, up to and including 7½ inches in diameter. The metal cutter used for dressing finishes rollers with an accuracy usually found only on *hard* metals. Cutter removes as little as .005-inch or as much as $\frac{3}{16}$-inch from the diameter in one cut, as desired.

Anyone experienced in handling tools can easily refinish rollers with this equipment.

Cecil Series "AA" Lathe Equipment

Consists of complete Cecil Roller Finishing Equipment and a heavy duty Rahn-Larmon 16-inch by 14-foot lathe. Finishing equipment can be removed leaving lathe available for other work.

Send coupon for complete information and prices.

DUST-LESS EQUIPMENT COMPANY,
1406 Monroe Street, N.E., Washington, D.C.

Gentlemen: Please send me complete information, including prices of your
☐ new Series "J" Roller Finishing Equipment.
☐ Series "AA" Lathe Equipment. Mark x before equipment interested in.

Name .....
Concern .....
Street .....
City ..... *State* .....

Application July 9, 1932. Serial No. 621,720, and in Germany August 25, 1931. 3 Claims. (Cl. 199—18.)

1. A matrix-setting and type-line-casting machine including in combination a matrix magazine, matrix release devices in front of the magazine, an independent composing keyboard, keys on the board, and Bowden cables directly connecting the keys and the matrix release devices.

1,945,498. INKING MEANS FOR PRINTING MECHANISM. True M. Avery, Glens Falls, N. Y., and William M. Seitzinger, Chicago, Ill., assignors to Union Bag and Paper Corporation, Hudson Falls, N. Y., a corporation of New Jersey. Original application May 26, 1930, Serial No. 455,919. Divided and this application July 19, 1932. Serial No. 623,424. 9 Claims. (Cl. 101—351.)

1. Printing mechanism comprising a rotatable printing roll, a rotatable ink feeding roll, a rotatable inking roll movable into and out of cooperation with the printing and ink-feeding rolls, means for adjusting the ink-feeding roll toward and from the inking roll, and means to act on the respective ends of the inking roll for holding the inking roll out of cooperation with the printing and ink-feeding rolls.

4. Ink supply means for printing mechanism comprising an ink supply well, a member for supporting an ink-container having a closed bottom in inverted position, a clamp in which the member is rotatable on a substantially horizontal axis, and means including a pipe extending substantially radially from the member and projecting downwardly into the well for providing fluid communication between the well and the ink-container.

1,945,569. PRINTING PROCESS AND APPARATUS. George S. Rowell, Cleveland Ohio, assignor, by mesne assignments, to Multigraph Company, Wilmington, Del., a corporation of Delaware. Application November 28, 1930. Serial No. 498,616. 11 Claims. (Cl. 41—46.)

1. In a printing process, the steps of preparing a negative medium for transmission of light to a suitably treated printing plate, consisting in forming a screen effect on a translucent base, covering the screen effect with an opaque frangible substance and then mechanically fracturing certain portions of such substance to define the images to be printed and in such manner that the image portions will transmit light through the screen effect while the remaining portions will obstruct light.

1,947,818. PUMP FOR PUMPING MOLTEN METAL. George Herbert White, Philadelphia, Pa., assignor to Patent Product Corporation of Chicago, a corporation of Delaware. Application July 7, 1930. Serial No. 465,912. 1 Claim. (Cl. 22 — 70).

In combination, a melting pot, a cylinder projecting upwardly from the bottom of the pot and adapted to be entirely immersed in the molten metal, a cylindrical opening at the top, an intake port through the wall of the cylinder adjacent the bottom of the pot, a piston adapted to reciprocate in the cylinder, a tortuous passage bounded by the cylinder and the piston communicating with the space beneath the piston within the cylinder at one end and with the body of metal above the cylinder at the other end, the edges of the walls bounding the tortuous passage being sharp.

1,947,843. APPARATUS FOR TRIMMING AND GROOVING ELECTROTYPE PLATES AND THE LIKE. Otto E. H. Ganskow, Berlin, Germany. Application December 28, 1931, Serial No. 583,418, and in Germany December 29, 1930. 19 claims. (Cl. 29 — 21.)

1. In a means for trimming and grooving electrotype and like plates, a standard, a pair of cutters one juxtaposed relative to the other, and a plate supporting table mounted on the standard, one of which is adjustable relative to the other, one of the cutters being supported to rotate in fixed position and adapted to normally engage and trim a marginal portion from a plate on the plate support and the other a plate grooving cutter, an adjustable support for the latter cutter to move the cutter into and out of engagement with the plate on the table and normally urged to position the cutter out of engagement with the plate, and means to effect adjustment of the support to move the grooving cutter into and out of engagement with and groove a predetermined portion of the plate while the trimming cutter is in operative engagement with and trimming a marginal portion from the plate in advance of the grooving cutter.

1,947,986. FORMATION OF PRINTING DIES. Lee M. Harley, Brooklyn, N. Y., assignor to James H. Matthews & Company, a corporation of Pennsylvania. Application November 11, 1932. Serial No. 642,213. 4 Claims. (Cl. 101 — 379.)

1. In a printing die or block the combination of a backing member with rubber character members of at least two different sizes permanently mounted thereon, the relative hardness of the rubber in the character members being greater for the character members of lesser size than for the character members of greater size.

1,948,001. SHEET FEEDER. Charles J. Mensman, Washington, D. C., and Earl D. Rader, Mount Kisco, N. Y., assignors to Dexter Folder Company, New York, N. Y., a corporation of New York. Application November 18, 1931. Serial No. 575,922. 72 Claims. (Cl. 271 — 61.)

1. In apparatus for use with means to which sheets are fed from a supply thereof on the apparatus, automatically operated means for moving the supply in angularly related directions to position the sheets for feeding to the first named means.

1,948,038. SHEET OR SIGNATURE SEPARATING AND FEEDING MECHANISMS. Edward R. Kast, Pearl River, N. Y., assignor to Dexter Folder Company, New York, N. Y., a corporation of New York. Application August 5, 1929. Serial No. 383,577. 8 Claims. (Cl. 101 — 409.)

1. In mechanism of the character described, a driven shaft, an element fixed on the shaft to rotate therewith, a jaw or anvil yieldably mounted in inclined position in the element and having a gripping face inclined inwardly from and disposed wholly within its circumferential circle of revolution, a gripper mounted on the element for movement within the circle toward and away from the jaw or anvil, and means for operating the gripper during its rotation with the shaft and the element fixed thereon.

1,948,590. PRINTING AND SLITTING MACHINE. Albert E. F. Moone, Chicago, Ill., assignor to The Lehon Company, a corporation of Illinois. Application February 29, 1932. Serial No. 595,697. 4 Claims. (Cl. 101 — 226.)

1. In a machine, a pair of side frames, an anvil roll journalled in the frames, a plurality of cutting cylinders mounted parallel to the anvil roll and adjacent its periphery, a like number of printing cylinders also mounted parallel to the anvil roll and adjacent its periphery, and means for separately moving each of the cutting and printing cylinders into engagement with the periphery of the roll.

1,948,651. PRINTING MACHINE. William K. Eckhard, Dunellen, N. J., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York; Irving Trust Company, receivers. Application April 20, 1931. Serial No. 531,427. 5 Claim (Cl. 101 — 247.).

1. In a printing machine, the following elements in combination: a supporting frame, an eccentric bushing rotatably mounted therein, anti-friction bearings in the eccentric bushing, a printing cylinder journaled in the anti-friction bearings, and means adapted to move the eccentric bushing and the printing cylinder axially.

1,948,821. PRINTER'S QUOIN. James Edgar Lee and Freeman Barney, Grand Haven, Mich., assignors to The Challenge Machinery Company, Grand Haven, Mich., a corporation of Michigan. Application July 20, 1932. Serial No. 623,586. 7 Claims. (Cl. 254 — 42.)

1. A quoin comprising, a channel member, a wedge member fitting between the flanges of the channel member, the wedge having wedging surfaces thereon, a second wedge member having wedging surfaces engaging the surfaces of the first mentioned wedge member and located between the first mentioned wedge member and the channel member, means including a key for forcing the first mentioned wedge member away from the channel member and guiding means for the key member, the guiding means being located in but extending unsymmetrically with respect to the opposite flanges of the channel member for the purpose described.

FOR SALE: New, unused Cost Cutter Saw. Latest model. Write for attractive offer and details. Box 8, care *Printing* EQUIPMENT *Engineer*, 1370 Ontario St., Cleveland, Ohio

If it's a tough metal *you're looking for···*

meet A-Z ELECTRIC ALLOY

Here's a metal that's tough and proud of it. Its name is A-Z Alloy.

As many as five hundred stereotype mats from one original line cut on A-Z Alloy are being made every day by one of the syndicate mat services.

Under actual tests it etches as fast as any engravers zinc, with a clean bottom and minimum acid consumption.

It is manufactured by the makers of the well known Zomo Electric Zinc — melted and cast by the same electric induction process which assures a uniformity unrivalled by other commercial processes.

Many engravers are finding it most economical and efficient to use both Zomo Electric Zinc and A-Z Alloy. You can now conveniently order both these metals from any of the following: American Steel & Copper Plate Co., Eastman Kodak Stores Inc., W. E. Booth Co. Ltd., Canada, C. G. Hussey & Co., National Steel & Copper Plate Co., Pacific Steel & Copper Plate Co., Rolled Plate Metal Co.

H. B. TRUNDLE

and sixty other publishers

KNOW:

'The way to make money *is to SAVE'*

DOWN in Danville, Va., H. B. Trundle publishes the Register in the morning, the Bee in the evening. Some time ago he realized that LESS OVERHEAD looks just as good to the bookkeeper as MORE BUSINESS.

So Mr. Trundle began combing over his plant to find out where he could save. He made many changes but his outstanding economy was the installation of Kemp Immersion Melting in his gas stereotype pots. Here's what he says about that:

> "We installed in February, 1933, a Kemp gas carburetor which reduced our gas bills almost 50 percent, or a roughly estimated saving of about $1200 a year. This saving can be effected, I believe, on any newspaper where gas is used for heating purposes."

How much is 50 percent of YOUR gas bill? Or be more conservative. Kemp Immersion Melting is GUARANTEED to save 40 PERCENT! If you too have realized "the way to make money is to SAVE", write, wire or phone Kemp at once and realize the biggest saving that any one item of plant improvement can give you. Kemp will install this equipment whenever you say. If it doesn't save 40 percent or more, if FOR ANY REASON you don't like it, out it comes and you'll never get a bill.

KEMP of BALTIMORE

THE C. M. KEMP MANUFACTURING COMPANY

405 East Oliver Street **Baltimore, Md.**

1,949,001. MONOCHROME AND POLYCHROME PRINTING. Karl Albrecht, Geisenheim-on-the-Rhine, Germany, assignor to Maschinenfabrik Johannisberg, G. m. b. H., Geisenheim-on-the-Rhine, Germany. Application June 18, 1931. Serial No. 545,299. In Germany June 10, 1930. 4 Claims. (Cl. 101 — 183.)

1. Apparatus for the production of monochrome and polychrome printing on one or both sides of a sheet in one operation, comprising the combination of a plurality of rotary printing mechanisms, sheet feeding means for each of the printing mechanisms, sheet transfer means interposed between the printing mechanisms and arranged to withdraw the sheet from one printing mechanism, conveying means arranged to receive the sheet withdrawn from the printing mechanism and convey it to the sheet feeding means of the next printing mechanism to receive a second impression on the same side, with sheet reversing means arranged to withdraw the sheet from the sheet transfer means, in the opposite direction to the direction of conveyance of the sheet by the conveying means and delivering the sheet inverted to the sheet feeding means of the next printing mechanism with the leading edge of the sheet to the rear to enable the next printing mechanism to print the sheet on the reverse side.

1,949,091. PAPER CUTTER AND PROCESS OF CUTTING PAPER. William L. Valiquette, Dayton, Ohio, assignor to The Harris-Seybold-Potter Company, Dayton, Ohio, a corporation of Delaware. Application July 26, 1930. Serial No. 470,925. 21 Claims. (Cl. 164 — 48.)

1. In a mechanical paper cutter having a cutting knife and means for holding down stacks of sheets during the cutting operation, means for advancing stacks of sheets and gauging means for determining the width of cut arranged to be abutted by the front edge of an advancing stack of sheets to be cut, the gauging means comprising an abutment set in the path of the knife for determining the width of trim, and a plurality of additional abutments successively farther from the knife for determining the successive widths of cut, the abutment for determining the width of trim being movable out of the path of the knife after the knife begins its operating stroke, and means for causing relative movement of the abutments and the stacks of sheets to permit the sheets to pass successive abutments.

1,949,102. ANTIOFFSET MECHANISM FOR PRINTING PRESSES. Richard J. Greenway, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application September 24, 1931. Serial No. 564,771. 6 Claims. (Cl. 91 — 59.)

1. An anti-offset mechanism comprising an anti-offset powder supply fountain, a fountain roll, a web contacting roll for applying the anti-offset powder to the freshly printed face of a web, and an anti-offset powder transfer roll for transferring the anti-offset powder from the fountain roll to the web contacting roll, the web contacting roll having its web contacting surface of soapstone.

1,949,132. PRINTING PRESS. Walter Harold Smith, Toronto, Ontario, Canada. Application October 13, 1931. Serial No. 568,603. 3 Claims. (Cl. 101 — 415.1.)

3. In a press cylinder having a narrow deep longitudinal groove having parallel walls, of a printing element having inturned end edge portions, one of the inturned ends fitting against one wall of the groove, a bar equal in width to the distance between both inserted inturned element ends one side face of which slidably bears against one inserted element end during the bar's insertion, and teeth formed on the other side face of the bar equal in depth to the thickness of the element so that the cutting edges of the teeth reach the other side wall of the groove and adapted when engaged to tear into the other inturned edge portion of the element as it is drawn thereby into the groove and as the tension of the element approaches the stretching point of the element.

1,949,223. PRINTING PRESS. Burnham C. Stickney, Hillside, N. J. Original application March 27, 1926, Serial No. 97,846. Patent No. 1,763,679, dated June 17, 1930. Divided and this application March 6, 1930. Serial No. 433,558. 11 Claims. (Cl. 101 — 351)

1. In a printing press, the combination with a printing couple including a printing cylinder, of a row of sets of inking rollers for individual forms upon the cylinder, each set including its own ink-fountain and its own form rollers, guideways being provided on the press along the cylinder and each set being adjustable along the guideways, means for securing each set while adjusted, a single ink-distributing roll for all the sets for the printing cylinder, and means for driving the roll.

1,949,233. PROCESS FOR THE PRODUCTION OF MERCURIZED PRINTING PLATES. Hermann George Zimmermann, Bentleigh, Victoria, Australia. Application December 10, 1931. Serial No. 580,216. In Australia July 27, 1931. 2 Claims. (Cl. 41 — 41.5.)

1. Process for the production of printing plates having mercurized ink repelling areas consisting in coating a base of a metal amalgamable with mercury with a metal not amalgamable with mercury, forming the design on the coating, amalgamating the exposed parts of the base with metallic mercury, treating the amalgamated parts with a solution of nitrate of silver and nitric acid to produce a layer of mercury having a matt surface and applying metallic mercury to the surface thus produced.

1,949,286. FEED GAUGE FOR PRINTING PRESSES. Charles L. Stiles, Columbus, Ohio. Application September 30, 1933. Serial No. 691,658. 3 Claims. (Cl. 101 — 415.)

3. In a feed gauge for printing presses, the gauge including a frame provided at one end with a tympan-engaging prong and at its other end with a perforated gauging head, the frame also having a slot between the ends provided with a rigid bridging portion, the latter having a projection struck upward therein, a flexible stripper member having a tongue portion and a cross head, the latter provided with bent ears slidably engaging the frame with the tongue portion extending through the perforation of the gauging head, the tongue portion flexed at and by the upward projection between the gauging head and the bent ears to frictionally hold the tongue in any position to which it is adjusted.

1,949,302. SLUG CASTING MACHINE. Frank C. Frolander, Elizabeth, N. J., assignor to Mergenthaler Linotype Company, a corporation of New York. Application July 1, 1932. Serial No. 620,325. 48 Claims. (Cl. 199 — 50.)

1. In a slug casting machine of the linotype class equipped with a first elevator and line justifying devices, the combination of a pair of line clamping jaws, a periodically operated device distinct from the first elevator and the line justifying devices, and distinct actuating connections between the device and the respective jaws.

1,949,362. PROCESS AND MACHINE FOR IMPRESSING AND EMBOSSING COVERING MATERIAL. Arthur M. Wickwire, Jr., Nutley, N. J., assignor to Peerless Foil Leaf Co., Inc., Union City, N. J., a corporation of New York. Application July 31, 1930. Serial No. 471,931. 6 Claims. (Cl. 41 — 7.)

1. The combination of a plurality of continuously operatively effective impression units disposed in successive relation, the impression units including a unit for embossing with metallic medium by the use of heat-releasing strip material embodying a metallic medium, the embossing unit further including a continuously operatively effective rotary cylinder for carrying suitable die or dies and a continuously operatively effective impression cylinder adapted to carry suitable make-ready material in intaglio of the relief of the die or dies, heating means for the rotary cylinder, continuously operatively effective re-winding means for the strip material, frictional drive means for the re-winding means, slack-effecting means for the strip material, said slack-effecting means exerting a force on the strip material in excess of the force of the friction driving means, and means for supplying web material to and through the plurality of the impression units.

1,949,419. APPARATUS FOR APPLYING AN ADHESIVE SURFACE TO A WEB. John A. Johnson, Brooklyn, N. Y. Application August 29, 1929, Serial No. 389,120. 6 Claims. (Cl. 154 — 37.)

1. In apparatus for applying an adhesive to a surface of a web, means to rotatably support a roll of the web to which the adhesive is to be applied and a roll of a web of adhesive material non-viscous under ordinary temperature and adapted to be rendered viscous by an elevated temperature, a positively driven take-up reel, a rotatable drum over which one web is guided to the take-up reel, means to heat the drum, means to guide the other web to the drum and juxtapose it to the first web guided over the drum comprising a pivoted lever with one end extending over the drum, and a roller carried at the end of the lever over which the web is guided, the lever being adapted to assume a position by gravity to juxtapose the web guided thereby onto the web guided over the drum and means to guide the juxtaposed webs from the drum to the take-up reel.

. . Plate-Making

(Continued from page 16)

Apparatus," and was granted July 27, 1920. This method, however, was also a transferring process. You will note at 1 in the accompanying diagram that the sheet bearing the image of the young girl, is a sensitized sheet of gelatin-coated paper, held in place by a vacuum board. The image on the negative was projected direct through the screen 2 (which is shown in an elevated position in the diagram) to the sensitized paper which was afterwards transferred to the surface of the printing press plate.

The users of the Pifer method, while they did some very creditable reproductions, were not altogether satisfied, for failures were bound to occur. So they began to reason: If we can project directly to the sensitized surface of a paper, why not do it directly to the sensitized surface of a printing press plate?

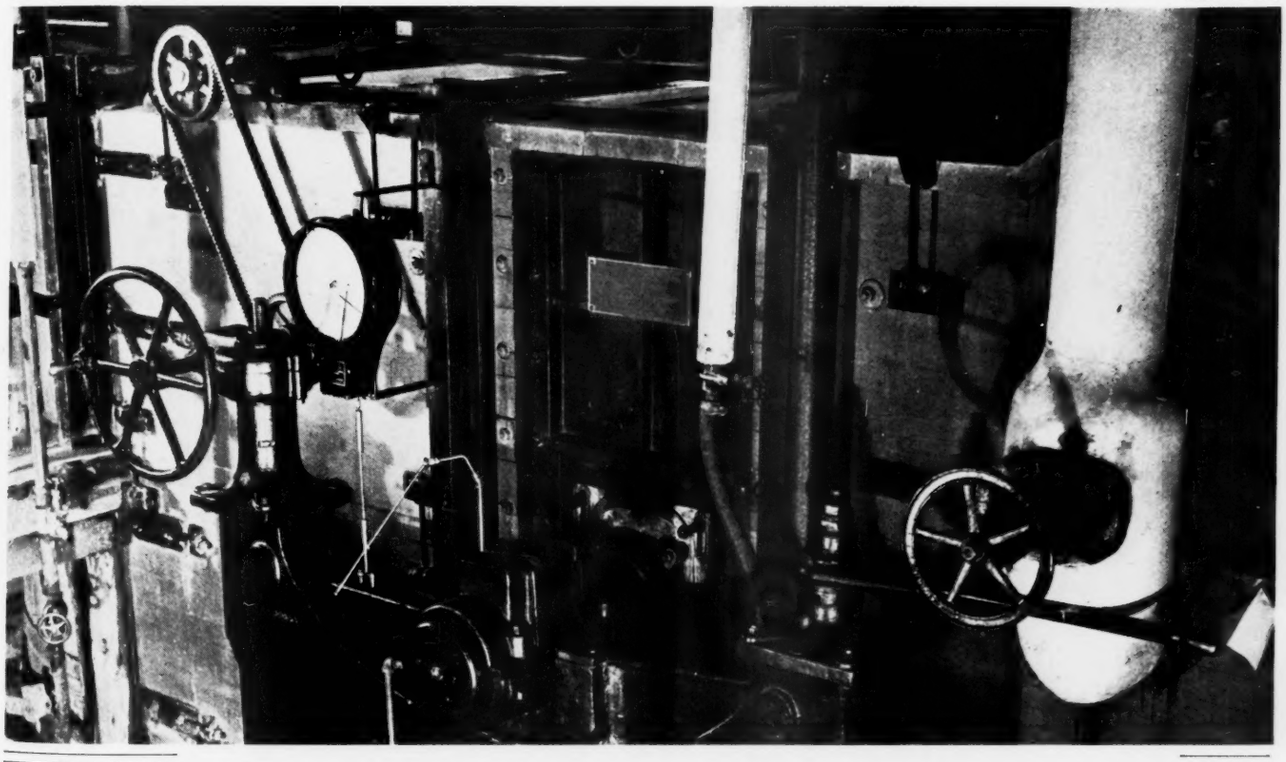
Then began a series of experiments, not only with sensitive materials, but also with lights, which lasted for several years. Credit must be given to an electrical expert from Nela Park, Cleveland, for a solution of the light question, and also to Albert B. Mueller, of Chicago. Mueller, an inventor of motion picture machines, and for a number of years a technical engineer for the motion picture industry, accomplished in a very short time what the others had been trying to perfect over a period of years—an accurate, speedy and economical projection apparatus.

It has now been four years since one of these machines was installed in a middlewest lithograph plant. It has been successful even beyond the expectations of the concern installing this equipment. This firm is turning out car cards, counter displays, window displays, streamers, posters, from the regulation one-sheet up to and including 24-sheet posters. The saving over the "indirect" or three-way method is very considerable (from 30 to 50%) and it may even go higher than that.

When you consider that only 8 by 10 in., either continuous tone or halftone negatives are used, that images on these negatives can be projected directly to the printing press plate in any size or any number of sizes, up to and including the 44 by 64 in. press plate, one can grasp some idea of the possibilities of projection. Consider too, that the only attention given to the negatives is to opaque around the edges, and to stain properly to retard the color values as desired—that's all.

In an early article the writer will explain in detail the functioning of the successful projection machine, and why its economy should appeal to every lithographer doing display work.

The Picture Story of "Wood Dry Mats in the Making" No. 4



Control is Vital to Wood Dry Mat Production

A GLANCE at one of our refining engines wherein the Wood Dry Mat has its beginning, must impress upon the reader the element of control. All implements must be properly adjusted and constantly watched in order that the thousands of pounds of raw material may receive the required treatment. If the stock is not handled correctly in the refining process, the utmost skill in the steps to follow will not correct the damage already done. For this initial operation and throughout the entire process it is, therefore, essential to employ skilled workmen.

WOOD DRY MATS
ALWAYS UNIFORM

WOOD FLONG CORPORATION
HOOSICK FALLS, NEW YORK

WHY
WE STICK TO IMPERIAL

Better Looking Sheet

"SEVERAL years ago we were having trouble with dirty, blurred printing. Practically every day we were getting dirty impressions. Our advertisers were raising cain over the appearance of their advertisements.

"At that time we suspected that our type metal was at the bottom of our troubles, so we called in an Imperial representative and changed over to Imperial and the Plus Plan. Our troubles actually vanished over night. Since then we have had a beautiful, clean looking sheet. Not only that, our front office has told me that our type metal costs have been materially reduced.

"This is the reason why we stick to Imperial, and anyone would have a hard time prying us loose."

Imperial
METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

St. Louis Mechanical Conference

IN RESPECT to the 1934 A. N. P. A. Mechanical Department Conference which is to be held at the Statler Hotel in St. Louis, it has been decided definitely that the dates will be June 4, 5, and 6.

As was announced in the March *Printing* EQUIPMENT *Engineer*, the opening day has been reserved for discussions of mechanical problems incidental to the smaller daily newspaper plant members. Manager W. E. Wines of the Mechanical Department, states it is to be understood, however, that representatives of the larger as well as the smaller newspapers are welcome to attend *all* sessions and no attempt is being made to establish any dividing line between large and small newspaper member attendance.

In line with the announcement made last month, Manager Wines states that he has assurances from officials of the Duplex Printing Press Co., Mergenthaler Linotype Co., Intertype Corporation, General Electric Co., Cline Electric Mfg. Co., and Cutler-Hammer that they will be glad to have representatives take part in the programs.

One session of the conference has been reserved for representatives of the advertising agencies in order to give the agency people an opportunity to discuss freely with the newspaper mechanical men the numerous problems which arise in connection with the printing of agency advertising either in black and white or colors. Advertising agencies will be invited to send representatives to this session and a St. Louis agency man will be invited to lead the discussion.

Executive or mechanical men from non-member newspapers, by order of the directors, will not be admitted to any sessions of the conference.

It is expected that the committee appointed by Chairman Kauffman of the Mechanical Committee will present its findings and recommendations at this meeting with respect to the standardization of dry mats. At the Pittsburgh Conference considerable discussion took place as to the advisability of reducing the myriad dry mat specifications to a half-dozen in number. Considerable speculation exists as to the findings of the committee, which in addition to Manager W. E. Wines, consists of F. C. Palmer, Jersey *Journal*, chairman; George H. Fuller, Cleveland *Press;* George H. Wheldon, Minneapolis *Tribune;* B. Wilson, Cleveland *News;* T. P. Beacom, the Hearst organization; and Paul Fite, Charleston (W. Va.) *Gazette*.

The A. N. P. A. Board of Directors has approved the recommendation of the Mechanical Committee with reference to admitting to the conference representatives of manufacturing and supply companies affiliated with the newspaper publishing industry. One representative from each company will be welcome to attend the conference sessions but without privileges of the floor unless requested by the presiding officer. No invitations will be issued by the Mechanical Department but in case a company wishes to have a representative sit in the meetings, application must first be made to the Mechanical Department direct, after which a letter or card of admission will be issued for presentation at the convention registration desk in the Hotel Statler previous to the opening of any session of the Conference.

Printing Trade Periodical Index

We have received "An Index to the Printing Trades Periodicals for the Year 1932," issued by the Printing Industry Research Association, St. Bride Institute, Bride Lane, E. C. 4, England. For the research man, investigator, student or for any members of the industry who might wish to obtain information on any subject pertaining to the printing industry, whether from the business or mechanical angle, the Index presents a valuable though not complete reference list.

Hints on Cylinder Pressroom Upkeep

Appearance of Pressroom Is Responsibility of Mechanical Executive—"Stripping" of Press Is a Bad Habit

By W. W. Hitchner*

Quite recently the writer had occasion to walk through one of Chicago's finest department stores and was impressed with the beauty of it all. It seemed that nothing was left to be desired in the way of a beautiful store and there was everything to induce one to buy and nothing to discourage a sale. While it might appear to some that it is going from the sublime to the ridiculous as a comparison, at the same time just imagine that this store, had it been dirty and disorderly instead of being its own silent salesman, would we care to patronize it? I think not.

Printing is an art which offers the craftsman an opportunity to view his attainments. The joy of achievement, the knowledge of a job well done, comes to the printer with greater realization than in any of the industrial arts. That is why we, as executives should strive to keep our pressrooms and other departments as clean and orderly as possible so that when our customers, or prospective ones visit our plant they will feel and we will know that their work will be cared for in the best possible manner.

Fortunate is the man who has been trained early in fundamentals of order, neatness and harmony. He will not have to hunt jobs—jobs will hunt him.

The excuse usually offered for dirty presses and surroundings is that "we are too busy." This is a lame excuse at best, but there is no reason for its use at this time when most plants have plenty of time to clean up.

CLEAN PRESSROOM PAYS DIVIDENDS

Keeping the pressroom and the presses clean and orderly will pay big dividends as a dirty pressroom and dirty presses invite trouble. Once the men are properly trained in this respect, they will not feel right themselves unless their surroundings are kept clean. A clean pressroom means less accidents and less accidents mean less insurance for your firm to pay. Cleanliness *does* breed cleanliness.

VALUE OF PROPER OILING

As a rule too little attention is paid to oiling the presses properly. Expert pressmen know the value of giving this their careful attention. When moving parts run dry they heat, expand and stick. All the oil leads should be kept free from dirt, if the oil does not flow in the tube freely, find out why before serious trouble occurs.

We have men in our employ whose main duty consists of oiling the presses morning and noon. Well-oiled bearings will not only keep a press running, but will also add to its life. It is desirable to use kerosene oil occasionally in the roller tracks,

*Superintendent of Pressroom Production, the Robt. O. Law Company, Chicago, Ill.

BURGESS CHROME MATS

Tell Our Technical Men Your Troubles

STEREOTYPING is an art. Burgess Chrome Mats have made its results surer and cleaner.

But problems will always arise. The facilities of the laboratories which developed Burgess Chrome Mats are ever at your service to help you meet your everyday problems.

You men in the stereotype rooms are our partners in working for better printing.

Whether you use Burgess Chrome Mats or not, we are definitely interested in your problems. Probably we've met them in our laboratory and know the answer. If not, we're ready to tackle them with you.

Just tell us what they are.

•

THE CHROME FORMULA

The Chrome Mat Formula gives Burgess Chrome Mats their superior printing characteristics—makes them easier to handle — reduces troubles —cuts costs.

•

BURGESS CELLULOSE COMPANY
FREEPORT, ILLINOIS

CHROME MATS

A Laboratory Product

BURGESS CHROME MATS

BURGESS CHROME MATS

BURGESS CHROME MATS

as this softens the gum of the machine oil and allows the sliders to run easily.

ADVANTAGES OF INSPECTION

Periodical inspection at the end of the week when the presses are down will pay dividends. In this way numerous breakdowns which would cause serious delays are prevented.

Only by continual inspection of both the presses and automatic feeders can the highest production efficiency be reached. As soon as any part of a machine shows wear it should be given attention. Parts that are worn or broken should be repaired or replaced at once. Extra or spare parts should be kept on hand, particularly certain parts that are known from past experience to wear quickly, such as fibre gears for the rollers, and other wearable parts.

Standardizing of all equipment has much merit, as the cost of maintenance will be decreased and operating problems will be simplified by having all equipment of uniform type where it is possible to do so.

ORGANIZATION AND EFFICIENCY

Efficiency in the pressroom depends on production by the presses and other equipment. This production depends on the performance of duty by the pressroom workers. The best machinery without the right pressroom organization is inefficient. On the other hand, the best organization is not fully efficient without proper equipment with which to work. The men responsible for production are indeed fortunate if they have under their supervision machinery that is new or in a nearly new condition.

Usually the pressroom superintendent finds, after he has taken stock of his new position, that he has fallen heir to various kinds of machinery, perhaps ranging all the way from five to thirty years old. If the man he has succeeded has been indifferent toward keeping all this machinery in good condition, he will have his work cut out for him, and it will be several months before he can show much in the way of the expected high production.

In our pressroom we demand quality printing along with what we consider good production. My motto has always been to give my lieutenants, which include the pressmen and feeders every advantage possible in the way of equipment and supplies and by endeavoring to keep the presses and automatic feeders in good condition at all times. The writer has been fortunate in having the full cooperation of his superiors in this respect, for, without this cooperation little success can be obtained by any mechanical executive.

"STRIPPING" IS A BAD HABIT

In some plants machine stripping is a habit and it cannot be condemned too strongly as a very bad habit. A machine that is temporarily idle, or out of service while similar types are being run is especially liable to depreciation due to its being robbed of parts wanted for use on the other machines. This practice would be unnecessary if spare parts were always on hand or easily obtainable; but it does not pay to carry spares for every part. However, machine stripping should be indulged in only when working conditions demand a quick repair. When a part is taken from another machine, an order should be entered at once for its replacement.

BELTS AND CHAIN DRIVE

Belts need attention. Well-kept belts will prevent a great deal of lost time.

In this respect, however, the writer heartily recommends chain drive to take the place of leather belts on all flat-bed presses. Our pressroom is equipped with chain drives which have proven very efficient in every way.

LUDLOW *has Improved Typographical Appearance*

THE Ludlow system of composition for setting display copy has given excellent satisfaction for the past ten years. The Ludlow saves time and labor and is easily handled, occupies little floor space, and through its use, the typographical appearance of the *Spectator* has been much improved.

In our opinion the Ludlow is indispensable to any newspaper office. We can heartily recommend it for its savings in production costs, for its clean-cut faces, and its unlimited supply of typefaces at all times.

ALBERT J. WAITE
Composing Room Superintendent
HAMILTON SPECTATOR
Hamilton, Ontario, Canada

Ludlow Typograph Co.
2032 Clybourn Avenue, Chicago, Illinois

Set in Ludlow Garamond Bold and its Italic with Elrod rules.

Your Questions Answered

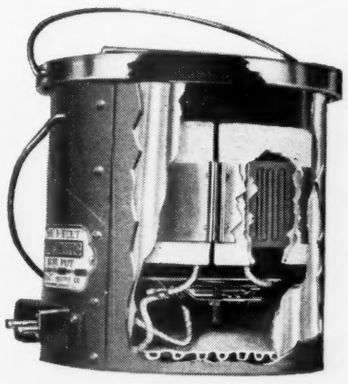
Slur in Press

F. F. writes: "I am sending you an original photograph, a photoengravers' proof and a press proof of some strip halftones. Everything we tried failed to prevent clouding of the top picture in the strip marked. I am anxious to know what was at fault—the photograph, the engraving, the ink or the workmanship. The latter included several washups, trials of two kinds of ink, more underlay, less underlay, raising and lowering of the form rollers, single and double inking. By double inking is meant tripping every other impression. The press has two form rollers, new and well seasoned. The halftones were made by a firm which has furnished us with many such cuts at a price much less than quoted by other engravers."

Answer—The makeready on the cuts seems to be good; however, it is not so good on the type matter.

Upon comparing the cut in question with the photograph under a glass we would say that it is a good reproduction. The highlight dots show almost perfect engraving workmanship. The press proof which submitted shows that there is a slur in the press. We would suggest that you set the bearers type high so the cylinder will sit snugly on the bearers. With the aid of a magnifying glass you will see that the head rules in the form do not print sharp and clean and have a feather edge on one side. Since you have but two form rollers you should be very careful in setting them. Use a good grade of ink suitable for this kind of work, which can be selected by consulting your ink man.

Printing Equipment and Supply Notes



An improved type of Hold-Heet Glue Pot is being made by the Russell Electric Company, 361 West Huron St., Chicago, Ill. The six improvements made in the new 1934 model are of a minor nature, but it is claimed, add considerably to the efficiency of the pots. Three changes have been made to increase strength of various parts. A moulded rubber attachment plug and a steel-armored connector plug replace the parts previously employed, and a rugged lava terminal insulator replaces the former porcelain part.

Some users employ glue pots without wiper rods. A removable aluminum wiper rod now replaces the riveted type. This prevents defacing the pot if the wiper rod is removed. In the new Hold-Heet Glue Pot the use of ears on both the inner chamber and the outer pot have been eliminated so that there are no projections where the glue can lodge.

The thermostatic control insures the temperature being held within 1 deg. without the use of water or a water jacket.

EDES PHOTO-ENGRAVING

EDES SUPERFINE QUALITY ZINC

ZINC

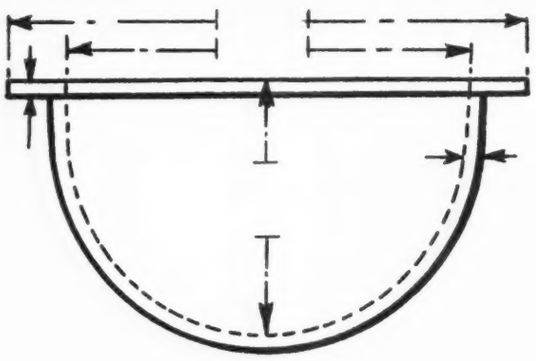
THE STANDARD FOR MORE THAN 80 YEARS

THE EDES MANUFACTURING CO., PLYMOUTH, MASS.

Uniform texture . . stands up under matrix pressure.

Sales Representatives

John H. Heimbuecher Metals Co., 514 No. Third St., St. Louis, Mo.
Gazzolo Drug & Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
R. Mohr & Sons, 883 Mission St., San Francisco, Cal.
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909-2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
G. C. Dom Supply Co., 125 East Pearl St., Cincinnati, Ohio



Have You A Spare Pot For An Emergency?

Such foresight eliminates worry, expense, trouble and delay. The cost is reasonable.

We produce pots to fit any furnace. Would you like to have a Pot with more metal capacity, a wider flange and a tapped drain hole at any position? We can produce one to fit your furnace.

Send us the above drawing with the dimensions of the Pot you need and state the metal capacity needed. We will quote you.

We also produce repigging Molds, Stereotype Job Furnaces, Linotype Remelt Furnaces heated with coal, gas or electricity.

THE ZELLNER FOUNDRY CO.

2088 Scranton Road Cleveland, Ohio

POT MAKERS FOR THE PRINTING AND TYPE METAL INDUSTRIES

New

No. 22 Electric

PROOF PRESS

$685

40 or More Proofs Per Minute!

•

Write for full information

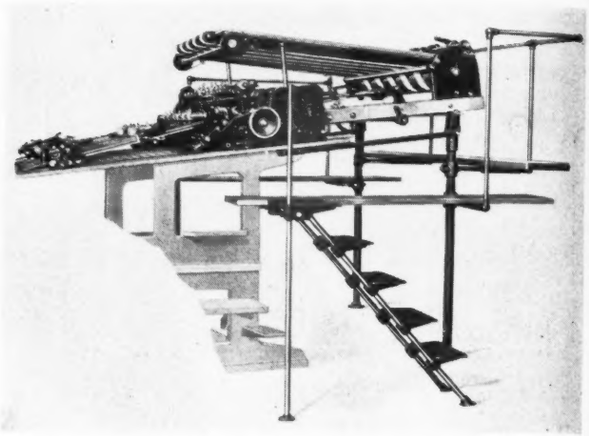
Vandercook & Sons, Inc.

Originators of the Modern Proof Press

900 North Kilpatrick Avenue, Chicago

New Continuous Feeder

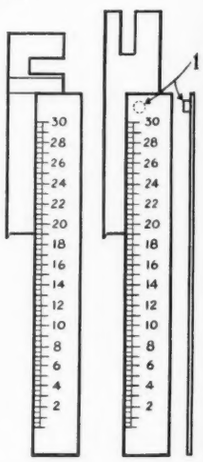
After three years of testing in a nationally-known plant operating 18 units, officials of The Christensen Machine Company, Racine Wis., have announced a new continuous feeder, designed for close-register work at high speeds.



The general principle of the design is to make the mechanism less complicated, to provide for making the principal adjustments readily without stopping the machine, and at the same time to obtain greater accuracy. Thirty-two features, including many original time-saving devices, are described in a bulletin just published.

The basic principle of the new machine is similar to that of the Christensen suction pile feeder. In fact, about 40 per cent of the parts are interchangeable.

Liner Measuring Rule



Alfred K. Washburn, 157 Verndale Ave., Providence, R. I., well-known line-casting machinist, who now maintains a line-casting machine service circuit in the states of Rhode Island, Connecticut, and Massachusetts, has devised a liner rule for both linotype and intertype liners, shown in reduced size in the illustration.

The markings on many liners after being used for some time, depending upon the care given the liners, become faint so that it is difficult to identify the length of slug the liner will cast. In case a liner has been cut down for a different measure than that for which it was first marked the original measure stampings are of no value.

The liner measuring rule will be of value also in preventing liners being damaged by the ejector blade by first checking the liner while in the mold to see if the ejector blade corresponds with the length of liner before operating the machine.

Further information may be obtained direct from Mr. Washburn at the address given above.

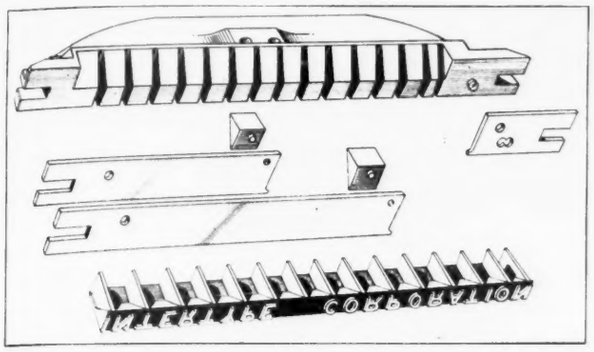
New Style Head-Letter Mold

A Universal Headletter Triangular-Shelf Mold Cap, recently developed by Intertype Corporation, 360 Furman St., Brooklyn, N. Y., has been designed to improve the strength and quality of recessed slugs. The stop-off ribs in this new style mold cap have been eliminated and a stop-off block is used in connection with standard Intertype Universal liners to cast slugs having a solid triangular shelf from end to end in any em length.

The new mold cap offers the following advantages: (1) It will produce a solid, triangular shelf to withstand the usual

dry mat pressure; (2) The solid triangular shelf provides a smooth surface for the electrotyper; (3) It will produce an improved face because the metal flows more directly to the matrix cavities; (4) A stronger slug is obtained with less metal, which means a cooler mold, and (5) It permits easy ejection.

One of the important features is that Standard Intertype liners are used with the exception that a small hole is drilled near the casting end of the left-hand liner into which a pin in



The new Intertype Universal Headletter Triangular-Shelf Mold Cap. The stop ribs in the customary recessed cap have been eliminated and a stop-off block is used in addition to a standard liner to form the left end of a slug. A small pin in the block is inserted in a hole in the liner to align the block with the liner.

the stop-off block fits for the purpose of closing off the triangular shelf opening along the front of the cap.

The same stop-off block can be inserted in any length liner in which the locating hole has been drilled. The hole in the liner, however, will not effect its use in other Intertype molds not requiring the new stop-off block. This type of mold cap can be supplied in C, D, E and L sizes.

New Matrix Cleaning Rubber

The Joseph Dixon Crucible Company of Jersey City, N. J., manufacturers of useful products for use about composing machines and in the printing and engraving trades, has introduced a matrix cleaner in the form of a rubber eraser which they call the Kwic-Klean Matrix Reference Rubber.

Its usefulness is based largely upon its composition to clean quickly without undue wear or injury to the matrix and its thoroughness in cleaning is facilitated by its unusual shape, it being made in the form of an equilateral triangle with 2⅝ in. sides ½ in. thick. This triangular form permits cleaning matrix edges and permits the cleaner points to be kept in form regardless of the wearing away of the rubber, retaining its cleaning effectiveness in crevices until it becomes so small that it cannot any longer be held in the fingers.

Its manufacturers point out that the pleasing results possible with this new rubber should not be prejudged by the experience of users of ordinary stationery store rubbers which in the past have been used for the purpose, in the absence of a rubber specifically designed in composition and shape to meet the particular requirements for cleaning matrices.

It is further emphasized that regardless of whether chemical cleaners or other methods may now be employed to clean matrices, this Kwic-Klean Matrix Reference Rubber also offers an easy way of brightening up the references and can be used as an auxiliary cleaner.

New Bench Model

Hacker Block Leveller No. 3

Give Plates A Chance

A good plate may give trouble if badly mounted. Every plate does better if accurately mounted.

A plate cannot be printed unless it is type-high—not about type-high but really type-high within one or two thousandths.

Plates inaccurately mounted must necessarily be subjected to considerable makeready.

Here is a new precision planer of such moderate price as to be within the reach of printers striving to reduce makeready.

Send for catalog.

HACKER MANUFACTURING CO.

320 SOUTH HONORE STREET CHICAGO

Machine Filed Saws

Save Time and Labor

Give you better cutting saws that stay sharp longer at less expense

Only when every tooth in a saw is filed to exactly the same size and spacing can it cut truer, faster and stay sharp longer. Those are the results you get with this accurate, precision machine, the

FOLEY AUTOMATIC SAW FILER

It files and joints every tooth to absolutely uniform size. Fully automatic. No eye-strain. No human errors. Makes saws last longer.

One Machine files all kinds of saws with straight-edge teeth—hand saws, band saws, metal cutting circular saws and cross-cut circular saws 3" to 24".

30-Day Free Trial

Give it a real test on your own saws. Write us today for folder giving complete information and our attractive prices.

FOLEY MFG CO.

57 Main St., N. E. Minneapolis, Minn.

A FEW USERS:

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Boston Herald
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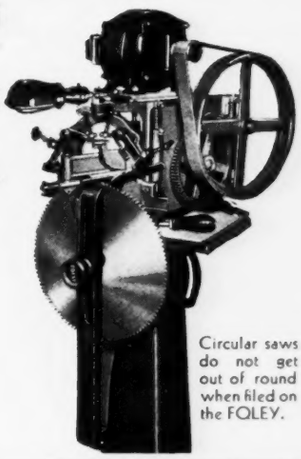
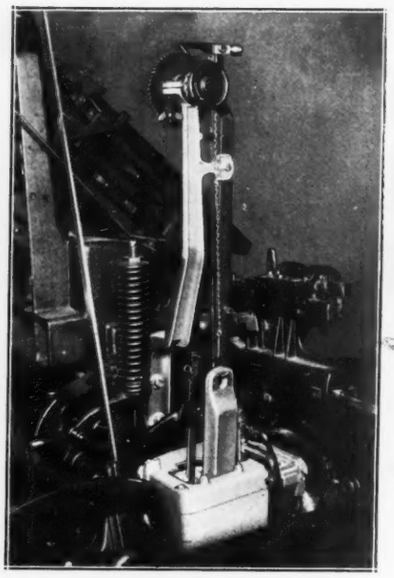
Philadelphia Public Ledger
Portland Oregonian
Providence Journal
St. Louis Star
Washington (D.C.) Star
And many other newspapers and commercial printers.



Circular saws do not get out of round when filed on the FOLEY.



KENDALL METAL FEEDER

$35.00

F. O. B. Danville, Ill.

Including two molds for casting ingots

Hundreds Now in Use • Satisfaction Guaranteed
No Holes to Drill or Tap • Fully Automatic
No Upkeep • Five Minutes to Install
Why Pay More?

Fits Linotype or Intertype Machines

Send order or request for further information to

COFFING HOIST CO., DANVILLE ILLINOIS

Be sure to SPECIFY

GODFREY PRINT ROLLERS

TRADE-MARK REGISTERED

And Have One Less Worry!

... Buy For Stability ...

SUPER "ELASTA" Non-Meltable — for Super Speed Presses — one of the joys of modern fast printing — Seasonal Rollers for real printing at the highest speeds — Rubber Rollers for newspapers—Rubber Rollers reground and polished.

Godfrey Roller Company

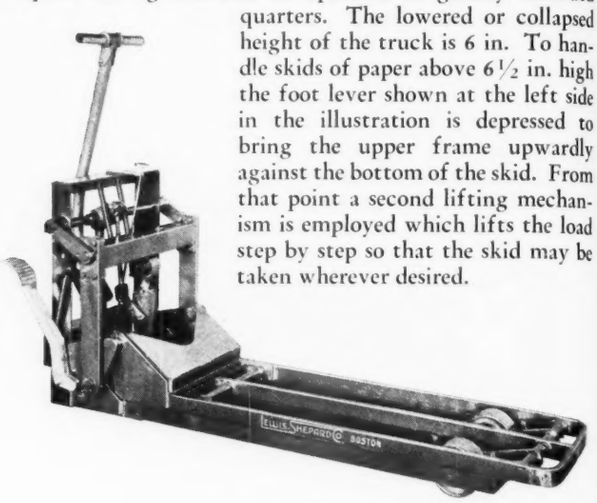
Makers of Printers' Rollers Since 1865

211-13-15 No. Camac Street Philadelphia, Penna.

WILLIAM P. SQUIBB, President

New Universal Lift Truck

The Lewis-Shepard Company, Watertown Station, Boston, Mass., is now making a new Universal Paper Lift Truck for use by printers and publishers who handle flat paper on skids. By means of this truck it is possible to lift and transport paper on skids even if the skids vary in height from 6 in. to 12 in. Specifications state that the truck is precision built, is quick acting and can be operated in greatly crowded quarters. The lowered or collapsed height of the truck is 6 in. To handle skids of paper above 6½ in. high the foot lever shown at the left side in the illustration is depressed to bring the upper frame upwardly against the bottom of the skid. From that point a second lifting mechanism is employed which lifts the load step by step so that the skid may be taken wherever desired.



Dustless Equipment for Rubber Roller Finishing

It has been announced that a new style printing press rubber roller finishing equipment for use in pressrooms is now being furnished by the Dustless Equipment Co., 1406 Monroe St., N. E., Washington, D. C. The new unit is known as series "J" machine and is furnished in addition to the Series "AA" three-way lathe equipment.

A feature of the Dustless Equipment is the patented metal cutter which is supplied in place of an abrasive wheel to remove stock from rubber rollers. It is claimed by the use of the metal cutter that the life of a rubber roller is prolonged because the cutter will finish a roller three times and remove no more rubber than is normally removed in one finishing with an emery wheel.

The Series "J" machine is specially designed for dressing and polishing rollers. It incorporates the Cecil bearing mounted, roller mounting method, dust collection and cooling features, metal cutter, soapstone applicator and collector. It is claimed that anyone in the pressroom can operate this machine. It is of heavy, rigid construction. The main spindle and all high-speed parts are mounted on ball bearings. The motor is mounted in the cabinet leg directly under the headstock. The carriage is equipped with automatic stops, which may be set to stop at any point desired. Speed changes are accomplished by easily shifted levers.

The Dustless equipment, it is also claimed, will finish rollers with an accuracy usually found only on hard metals and within a limit of from 0.002 in. to 0.004 in. by actual measurement. A gauge measures and registers variations in diameter on a dial reading in 0.001 in. Each roller is mounted on its own bearings automatically placing it in perfect alignment without time consuming adjustments, thus insuring accuracy of finish. It requires 35 minutes to run a cut across a roller of 72-in. face up to 7½ in. diam. The roller is dressed and polished (such rollers as it is desired to polish) without removing it from the machine. The polishing requires approximately 30 minutes for the average roller which operation is done by hand.

Would You Like to Receive Equipment Literature

Readers of *Printing* EQUIPMENT *Engineer* who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

Wood Type Catalog—Containing specimens of wood type suitable for use as streamer lines on newspaper front pages. Size, 10½ by 13¾. Bound with spiral binding. Sent upon receipt of 8c in stamps to cover postage by American Wood Type Mfg. Co., 270 Lafayette St., New York, N. Y.

Print Shop Accessories—Folder illustrating and describing register nuts, hand beveler, cleaning brush for patent base and a shute board.

Electric Heating Units and Devices—Illustrated booklet, 52 pages and cover, describing, among many other applications, heating units and control apparatus for stereotype furnaces, nickel-plating tanks, case-warming cabinets, type metal pots and glue tanks.

Metal Feeder—Folder describing a cold metal feeder using 35-lb. ingots for composing machines.

Chuck for Non-Returnable Newsprint Cores—Folder showing device and related advantages.

Direct Pressure Moulding Press—Bulletin describing machine and its applications.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.

Gentlemen: Please send the literature checked above without obligation.

Name of Company_____

Attention of _____

Position_____ Dept._____

Street Address_____

City_____ State_____

. . Makeready

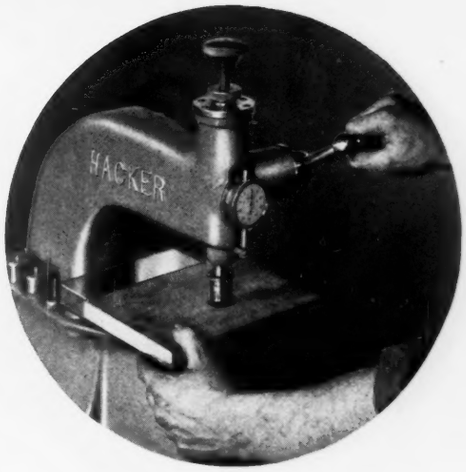
(Continued from page 20)

given to him and prints. And he does an amazingly good job of it. Considering the innumerable errors with which he must contend, principally forms full of high and low material, he is extraordinarily skillful in compensating them and balancing them by shimming and scraping and fitting which is known as makeready. Pressmen cannot do anything about it, but they would be happy to have somebody else do something about it, and relieve them of their most difficult task, and release them to their principal duty which is the production of printed sheets.

RESPONSIBILITY OF OPERATING EXECUTIVE

It is clear that the management is responsible for makeready. Errors arise in many places and involve different departments. One department is reluctant to take on work, the benefits of which show up in other departments. What is the operating executive for if not to coordinate the divisions of a plant to yield the most effective result? Makeready is his job. He alone has the authority over *all* of the factors. He can master it if he will organize for it.

General Repairs of Linotype or Intertype Parts
Special Tools and Appliances for Composing Room
Reid Linotype and Intertype Magazine Racks
WILLIAM REID & CO.
537 SO. LA SALLE STREET CHICAGO, ILLINOIS



How High?

Is it type high? Or is it .005" over, or .010" under? There is a lot of difference.

Maybe it ought to be one or maybe the other, but there would be different reasons, and your measurement must be sure. Only in this way can you get control of makeready.

Hacker Plate Gauges are sure. They measure under printing pressure. They measure the entire block. They are rapid. Everybody can use them and all get the same result.

They will tell you just exactly how high—in thousandths of an inch—and give control of makeready.

HACKER MANUFACTURING CO.
320 SOUTH HONORE STREET CHICAGO

MORLEY
.better
MATS

. . Speedier on "form"
. . Winners on performance—

•

Why not try MORLEY MATS
Samples FREE for the asking.

MORLEY BUTTON MANUFACTURING CO.
PORTSMOUTH, NEW HAMPSHIRE
New York Office, 47 East 11th Street

THE PLANOGRAPH PROCESS

is being installed in a great many printing plants. We make the most modern equipment for planograph plate making.

Write for catalog describing this equipment.

R. R. ROBERTSON
Daily News Building
CHICAGO, ILLINOIS

MANUFACTURERS OF OFFSET AND PHOTO-ENGRAVING EQUIPMENT

COMPETITION VERSUS MONOPOLY!

For the past ten years this company has greatly benefited the Linotype Machine owner.

First . By putting a **reasonable** price on its merchandise.

Second, By putting back into service thousands of dollars worth of parts through its repair and Rebuilding Service.

Third . By improving and re-designing existing parts to give greater efficiency and economy.

Recently, drastic price reductions have been made with a view to eliminating independent competition. This would be detrimental to the industry.

This is self-evident.

We have met all price reductions. It will therefore cost the machine owner **no more** to continue patronage of the STAR line—and so help maintain competition.

By helping us—you help yourself!

DISTRIBUTORS FOR
Ace Cord-Rubber **Guaranteed** Belts, Matrix Delivery, Distributor, Assembler, Intermediate Drive, etc.

LINOTYPE PARTS CORPORATION

NEW YORK
203 Lafayette Street

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314 West 10th Street

Agencies:

CHICAGO
314 West Randolph Street

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1520 Georgia Street

PRE-MAKEREADY DEPARTMENT IN SIZABLE PLANT

It is clear that in a sizeable plant this thing is important enough to justify an inspection and pre-makeready department, in charge of a competent man, reporting direct to the superintendent. All phases of the work would be centered in this organized unit where it can be done most effectively.

PRE-MAKEREADY AS APPLIED TO SMALL PLANT

It is equally clear that small shops cannot afford such a department. They may have need for only some of these measures. But they can pick and choose according to their particular requirements. And they can materially reduce their press costs by such inspection and pre-correction as is practical for them. You can take all or any part of this plan and any part is good, and worthwhile.

INDUCES BETTER PRINTING MATERIALS

Finally, you will get better electrotypes if you deliver accurately levelled and justified foundry forms; you will get better press work if you deliver accurately levelled and justified press forms; you will get better supplies if you inspect them before accepting them; and you will get better work all through the plant when everybody knows that you are measuring, inspecting, and checking up on everybody's work which in any way touches impression.

The causes of makeready are known. The means of correction are available. Prevention is in the hands of the chief operating executive.

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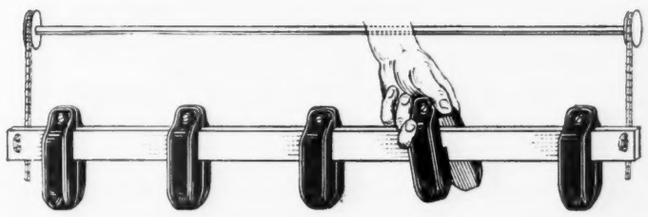
FORM-O-SCORCH MODEL "C"

Fastest operating — most efficient — most reasonably priced Scorcher on the market

outside removable heating units——
——selective heat control——
self-conforming curtain cover——
——adjustable forming tension
automatic timing device——

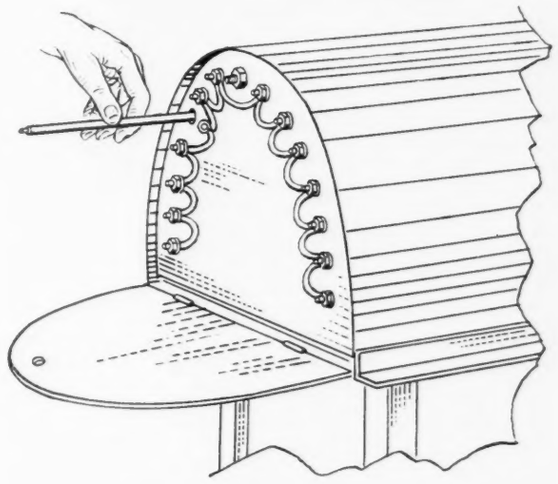


Counter weights, adjusting tension of the self-conforming asbestos cover

A Form-O-Scorch machine, such as pictured above, but equipped with unlimited heat is being installed in the Indianapolis *Times*. This equipment will insure speedy scorching and adjustable tension.

If you are interested in a matrix scorching machine and would like some special feature of your own built into the machine we suggest that you communicate with us. We build scorchers to meet the individual requirements of any office.

Form-O-Scorch machines are built for Tubular, Flat and Semi-Cylindrical Work



Illustrating Outside Removable Electric Heating Units

Model "C" Machine has outside removable Electric Heating Units. The units may be tested or removed by opening the sides or arches of the Scorcher. New Electric Heating Units may be inserted by drawing out the old ones and simply sliding in new ones.

ANNOUNCEMENT

Because of the increasing demand and the many recent installations throughout Canada, the W. E. Booth Co., Ltd., of Toronto and Montreal, have been granted the exclusive agency for Form-O-Scorch machines in Canada.

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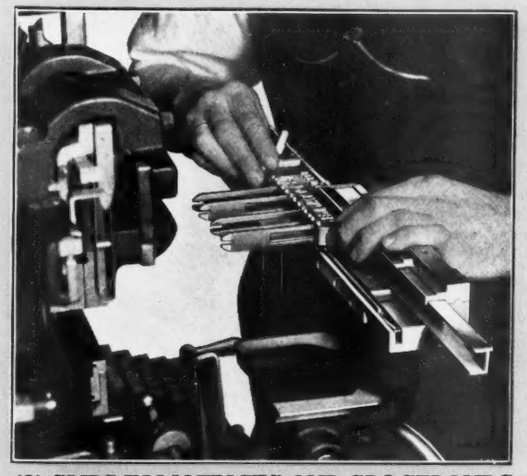
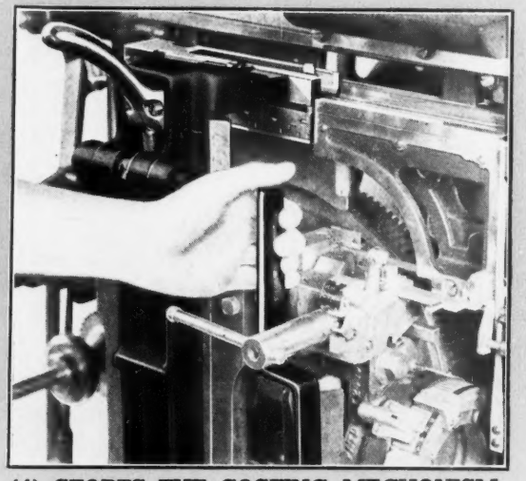
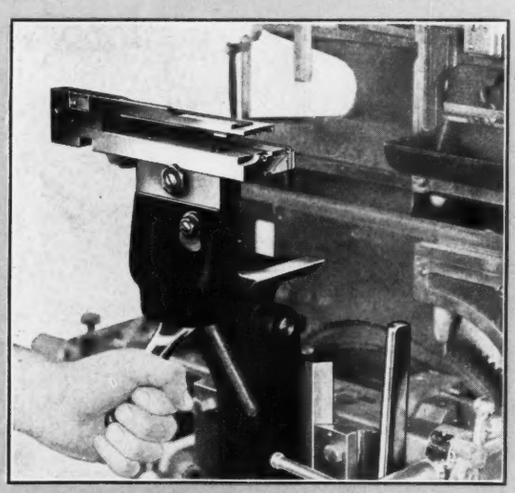


(3) SLIPS IN MATRICES AND SPACEBANDS

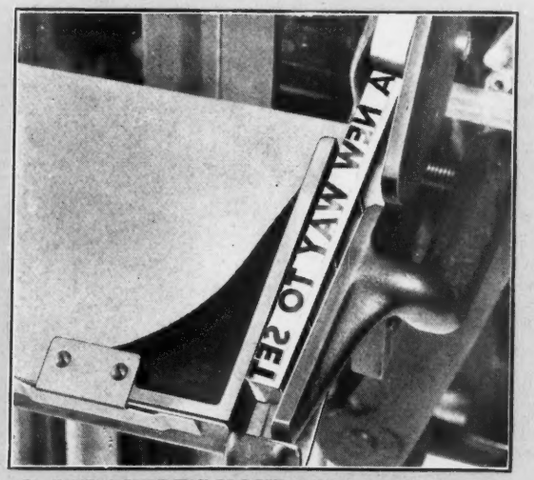
(1) THE OPERATOR COMPOSES THE LINE



(4) STARTS THE CASTING MECHANISM



(2) OPENS NEW HINGED FIRST ELEVATOR



(5) AND THERE'S YOUR LINE OF BIG TYPE

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